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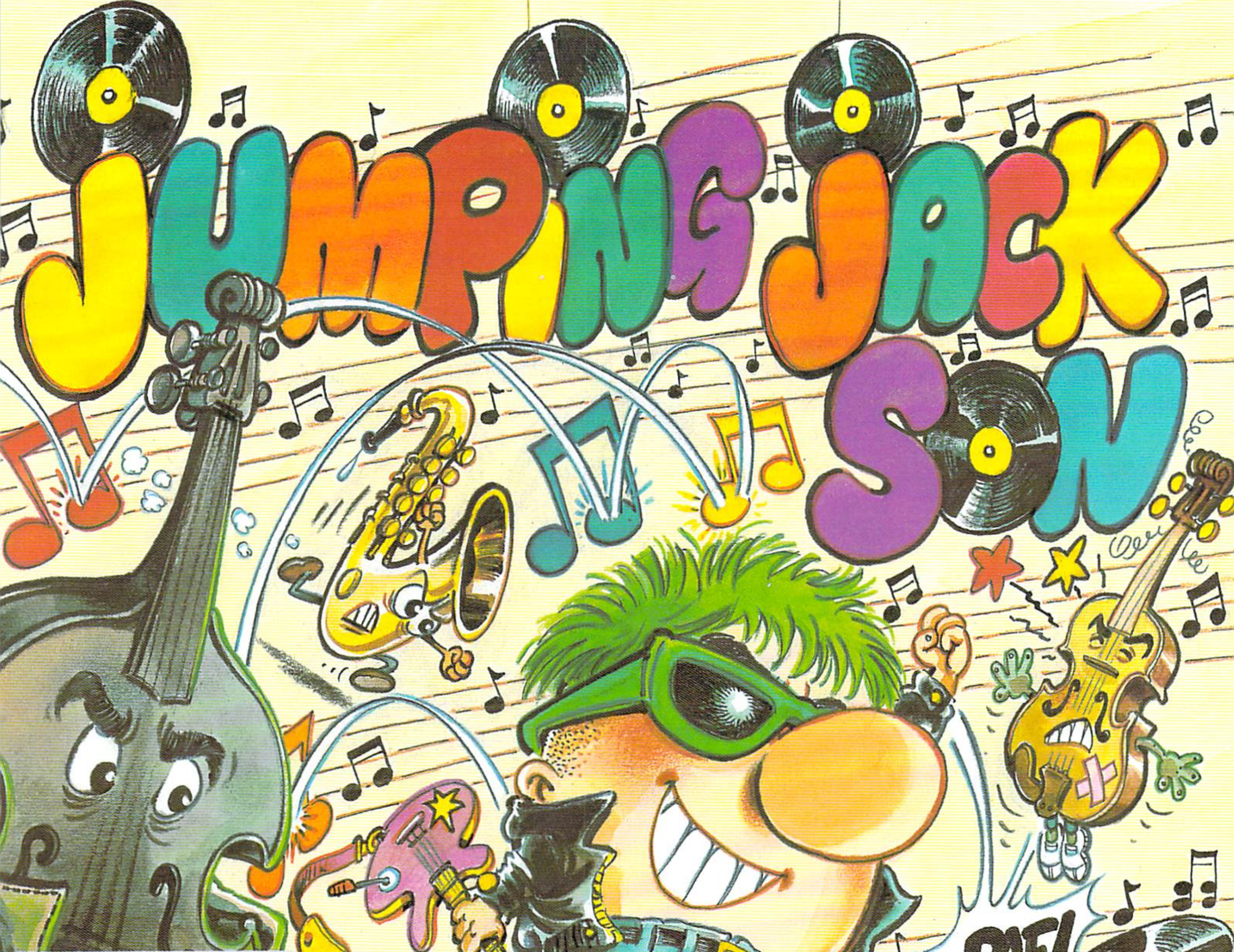
AMIGA COMPUTING

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Music to your ears

Rock'n'Roll is back in town!



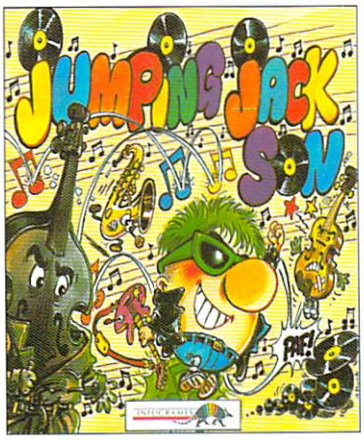
In a deluge of colour and music, save the Earth from a classical catastrophe. Classical music (yuk!) in its most tortureous form has overrun the world. With monsters so hideously hideous, so exaggeratingly evil, so barbarously bad, it's slowly destroying the last traces of the only great music... Rock'n'Roll. JUMPING JACK SON is our only hope.

As quick as a flash, find out the "timeless classic", the "golden oldie", the records which made Rock'n'Roll. And, of course, the first 45 cut by the King himself, Elvis Presley. All these records must be placed where they belong... THE JUKE BOX.

JJS is the fulfilment of technical performances. More than 27 colours on the main game screen (on both Amiga and Atari!), and up to 100 colours on the other screens. And don't turn a deaf ear! JJS also has 400 kb of Rock'n'Roll and FX sounds.

JUMPING JACK SON is a Magical, Musical, Visual, Mystery Tour... An ear splitting, eye popping adventure. JUMP at the opportunity and JIVE into the action.

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Dragon's Breath, Page 40



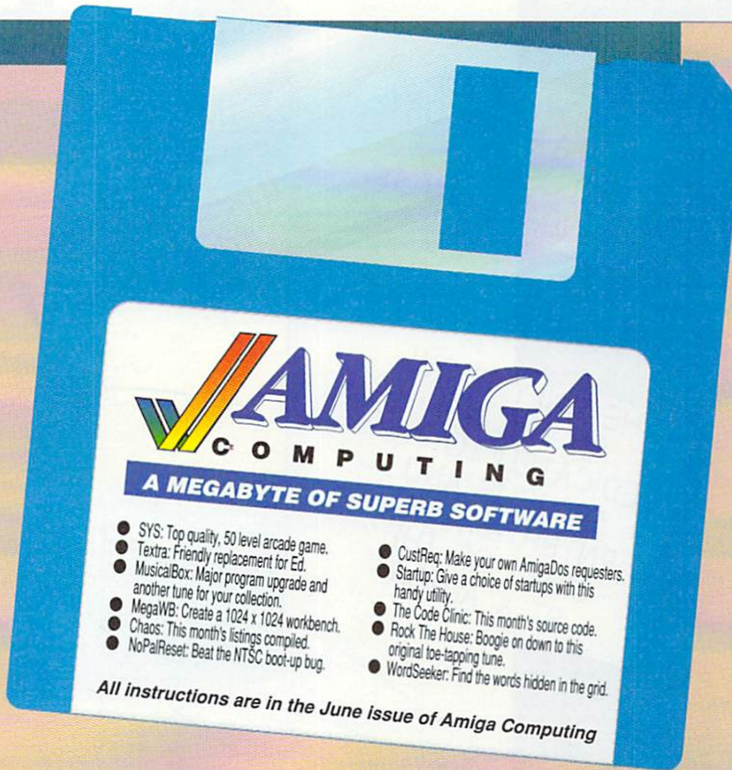
688 Attack Sub, Page 43

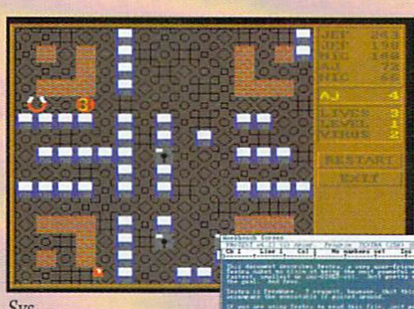




Might and Magic II, Page 38

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Date set for Commodore's Archimedes-basher

FACED with mounting trade speculation, Commodore has finally admitted the existence of its new Amiga. As *Amiga Computing* went to press, a company spokesman confirmed that the machine would be launched at the Which? Computer Show.

All firm information on the latest Amiga was under strict embargo until April 24, the first day of the show, after it failed to make its expected debut at the CeBit '90 show in Hanover.

Full details will appear in next month's *Amiga Computing* but in the meantime the trade has been indulging in its traditional guessing games – some said to come from the inevitable "reliable sources".

Rumours say that the new machine is centered round a 25MHz 68030, 32 bit processor, is smaller than the existing A2000 and only contains four expansion slots rather than seven.

It is said to be fitted with 1Mb of chip ram upgradeable to 2Mb plus 1Mb of fast ram upgradeable to a maximum of 4Mb.

Tipped to be faster than an equivalent Acorn Archimedes, the new Amiga is also said to include a display enhancer, AmigaDos 1.4, and fastfile hard disc format routines in rom.

Other sources have hinted at two models – a 25MHz and a 33MHz version.

The new machine has long been dubbed the A3000 but Commodore could not be persuaded to reveal its official name. If that tag is correct, it could lead to problems with Acorn Computers which used the same name for its latest Archimedes-based BBC Micro.



Amiga's top of the pops

THE Amiga has been voted Top of the Pops by new group Oh Well. Teamed with the skills of The Bitmap Brothers it was used to produce a promotional video for the band's latest single Radar Love.

A London video production company approached the Bitmaps and asked them to provide additional graphics footage for the video. Using the graphics an Amiga 2000 with extended memory and an accelerator board, they created on-screen ripple effects. The project took four days and the results were then incorporated into the film already taken of the band.



Germany taking stock

AN English version of the German stock market simulation Wall Street Wizard from Profisoft has been added to the range offered by Data Liberation (0983 864674).

Due from the same stable later this year are simulations of running a trucking company across Europe and of a 19th century railway system.

Wall Street Wizard is a stock market challenge for one to six players. It has 10 skill levels and includes 12 major industries and 48 stocks interacting with more than 1,000 businesses and various political events. Price, £39.95.

Under development for the Amiga is A Day at the Races, which is all about owning, training, racing and making money with horses. A total of 500 horses and jockeys are followed throughout a year's racing with the database keeping records and updating form for each playing session.

Tipster falls at National

AMIGA betting program The Tipster has fallen at the last fence after a winning streak which put money in the pockets of its developer Stever Marriott, his family and many users of the package.

Call Collect, Brown Windsor and outsiders Stars Delight and Ghofar were The Tipster's tips for the Grand National. Brown Windsor was the only horse to show, coming in fourth.

The Tipster's winning streak started with the Cheltenham Gold Cup when it threw up rank outsider Norton's Coin. The horse romped home at 100-1 which was good news for the Marriott family who market the package through their Exeter-based company TAM (0392 215485). They won £1,000. The program was also right with Toby Tobias which came in second.

Its winning streak was repeated with the 33-1 outsider Evic Star in The Lincoln.

Steve admits that neither he nor his family have any expertise in the horse world. He is an electronics technician and wrote The Tipster in November last year, applying pure statistics to data on the winners from 800 races.

He also built in eight special points which include the often discounted beaten favourites and the number of days since a horse ran.

Speedy spreadsheet

THE latest offering from Gold Disk is claimed to have the fastest recalculations of any Amiga spreadsheet.

Home Office Advantage features more than 80 statistical, financial, trigonometric and user-definable functions and allows worksheets of up to 65,000 rows by 65,000 columns to be constructed.

Information can be transferred from the package's built-in database and charts and graphs can be created via the graphics section. Home Office Advantage is available from HB Marketing (0753 686000), price £99.95.

Animation gets moving

ANIMATION can be a laborious task but the Amiga can speed up the process with the help of a new package developed in Canada.

Journeyman comes from Hask Enterprises of Vancouver. By manipulating images on an Amiga, users can produce animated sequences much more quickly than by the traditional method of snapping individual frames in sequence. It costs $500. Hask Enterprises can be contacted on 0101 206 696 7443.

Date with the family

AMIGA owners who want to keep tabs on their families now have an easily used but fully comprehensive genealogical database which can support 18 generations with siblings.

NorGen comes from America and is available through MGA SoftCat (0797 226601).

Reports can be extracted by such dates as anniversaries or birthdays or by any name. Price, £99.95.



They're flying in A500s to feed the boom

WITH the launch of the new Flight of Fantasy pack, Commodore has a bit of a problem on its hands. Four months after its release the Batman pack is still selling well, and there aren't enough A500s to go round.

To stock the warehouses with the new pack means having to cut back on the production of Batman packs, so in an unprecedented move Commodore is having more A500s flown into the country.

"This sort of thing usually only happens at Christmas", said Kelly Sumner, Commodore's national accounts manager. "Flying product in at this stage is unheard of".

And the Flight of Fantasy pack is destined to sell well. While the country's games players waited anxiously for the release of Ocean's F-29 Retaliator, Commodore was keeping under its hat the news that it had scooped up the game for inclusion in the pack. Bundled along with F-29 is Rainbow Islands, Domark's yet-to-be-released Escape from the Planet of the Robot Monsters and the ubiquitous Deluxe Paint II.

With UK sales of the A500 already topping 250,000, Commodore must be hoping that with the Flight of Fantasy pack it will put the ST challenge behind it forever.

Music for beginners

FOR the beginner, music making with computers can be a world full of complex equipment and confusing terms. Roland UK (01-568 4578) aims to solve these problems through its new package designed with the amateur in mind.

The Desktop Music Pack contains everything a newcomer needs to make beautiful sounds and as *Amiga Computing* went to press Roland's computer music man George Thorn said the company was just a couple of weeks away from launching an Amiga version. This decision followed the news that Midi software producer Dr.T. has launched an Amiga version of its Tiger Cub sequencer.

"The pack has been put together because we believe there is a whole new market for people with Amigas who don't think they are musicians", said marketing manager for Roland, Alan Townsend.

"The Desktop Music Pack is designed for players who would like to add more professional sounds to their games and for computer owners who would like to create music with their machine and a sequencer. These people may not know anything about musical instruments, so the package has been made very very simple for them".

Desktop Music Pack includes a CM32L module which makes the sound, the Tiger Cub sequencer and scorewriter Copyist Apprentice, also from Dr.T.

The Tiger Cub software package allows sequencing and recording data for playback using rhythm and eight different instruments playing at the same time out of one box. Copyist Apprentice is compatible with Tiger Cub and runs simultaneously through Dr.T's MPE switch system.

It is an improved version of the Quick-score score writer.

Also included in the pack is a utility desktop accessory disc which helps set the module's reverb and tuning, three Midi leads and two audio leads for connecting the system to a hi-fi.

The package costs around £469 which is claimed to be a saving of £80 on the price of the equipment when bought separately.

Socket –

AN accelerator card claimed to run software six times faster than a standard Amiga has been launched by Solid State Leisure (0933 650677).

With the addition of an 68881 maths co-processor, speeds can be increased by 20 times and with an 82 by

Roll on under blue skies

AMIGA owners who don't mind using a product which still has the Atari name on it can get into the trackerball movement with the latest product from Blue Sky Systems.

Julian Beech, who previously worked with Hard Edge Communications, has now set up Blue Sky and has converted the popular Atari trackerball to the Amiga. Good for games, it can be used as a mouse replacement and features a high quality smooth ball.

Julian has kept the price down to £29.99 but to do that he did not feel it was viable to have the Atari name taken off and replaced by Amiga. Blue Sky is at 16 Sidney Street, Sheffield, S1 4RH. Telephone 0742 738675. Fax 0742 757953.

New drive for Amigas

A NEW external disc drive and games pack for Amiga owners has been launched by Electronic Zoo (0453 887008).

The drive is fitted with an on/off switch to disable it when extra memory is needed and has a long lead for positioning on either side of the Amiga. Equipped with a through connector, it is housed in a strong steel case and is fully compatible with the Commodore 1010 drive but much smaller, measuring just 220mm x 140mm x 29mm.

Included in the pack are five games – the Breakout-style action package Impact with 80 levels, Cosmi helicopter flight simulator Super Huey, Microdeal shoot-'em-up Gold Runner, Hewson's 100 screen firepower game Exolon and Microdeal's commando-style shoot-em-up Leatherneck.

The pack costs £99.



Electronic Zoo's new Amiga drive

and speed up

40 times, according to Solid State's Mark Tenny.

Designed for the A500, 20-Card has 4Mb ram capacity, runs at 16 MHz and is of completely asynchronous design. It fits into the 68k socket, comes with 1Mb of memory and measures 7.75 x 5.3 inches. Price, £399.

VirusX vandalised again

A BOGUS version of Steve Tibbett's famous virus killer, VirusX, has appeared recently, circulating under the name of VirusX 4.4. This is the second time this popular program has been patched and spread by unscrupulous and anonymous hackers.

Last year an altered version of VirusX 3.2 made the rounds calling itself VirusX 3.3.

Like version 3.3, version 4.4 is not by Steve Tibbett. It is, however, harmless. If you have it and you've run it, there's nothing to worry about – it is only a VirusX 4.0 archive that has been slightly modified by somebody who obviously doesn't know anything about C – nor, based on some of the things he says, about programming the Amiga.

The 4.4 archive contains a VirusX.Docs that has a description of a new virus appended to the documents, has a longer description of this virus appended to the source file, has some punctuation moved around in the source file, and has the 4.00 version number patched to 4.40.

That's it. If you have it, please don't pass it on.

Steve Tibbett says another version of the real VirusX is imminent, with new features and knowledge of a number of new viruses. As soon as Steve releases it we'll pass it on to you on the Amiga Computing cover disc.

Maths for the minors

MATHTALK and Mathtalk Fractions are the latest educational offerings on the Amiga from ESP Software (0702 600557).

Designed for five to 13 year-olds, Mathtalk concentrates on addition, subtraction, multiplication and division. With input from both mouse and keyboard, the program speaks to the student via character Professor Matt A.Matics, working through problems and showing how to solve them if a mistake is made.

Interest is kept by the inclusion of two simple games and users can increase difficulty by inputing their own problems which can be saved for later use.

Mathtalk Fractions is designed for 8 to 15-year-olds, features Professor Matt and concentrates on fractions, decimals and percentages. Moving away from straight question and answer, it is another tutorial program which includes games to keep interest.

Both programs cost £19.95.

Long life mouse

A NEW upgrade service for Amiga mice is now available from Simpson Electronics (0332 760353).

By replacing the existing switch gear with high quality microswitches, the company aims to lengthen the working life of a mouse.

The upgrade is guaranteed for a year and a minimum of 200,000 operations. Price, £12.50.

A500 net

NINE Tiles Computer Systems (0223 440099) has released a new low-cost network for the Amiga.

Allowing the A500 to be linked to PCs or A2000s and vice versa, the system can support up to 125 machines. It features CatenaNet software and a plug-in Amiga card. Price, £300 per user.

Now playing on Amigas

QUARTET, the Midi sample sequencer which made such a name for itself on the Atari ST, is now available for Amiga the 500, 1000 and 2000.

The package includes all that is needed to make a demo and save it to disc. Users can choose between an auto-booting demo or one that can be operated from the Workbench.

Samples can be used from any type of sampler including AMAS and Master Sound with a capacity for up to 16 samples in memory at once – all accessible from the keypad.

The program also adopts poly-play mode which make sample playback possible. It costs £49.95 and is available from Microdeal (0726 68020).

Also available from Micrdeal is a new Midi interface for Amiga 500 and 2000. Price, £24.95.

Distinctly Digita



Cleverly written and always favourably reviewed in the press, Digita produces a range of powerful, low cost software for the home and business user.

DGCALC

The fastest and most powerful spreadsheet available in this price bracket, with 512 rows by 52 columns, giving you up to 26624 cells. As with all Digita products, the operation of the program is clearly thought out. Being either menu, mouse or command driven you'll be able to start using it within minutes – even if you've never used a spreadsheet before. Some of the features which make it such good value are the exporting of ASCII files for integration with other programs, adjustable column width and text overflow, programmable function keys (macros), and a unique windowing facility, so that you can look at different parts of a sheet at the same time.

£39.95

MAILSHOT

If you ever need to send out mailings or print labels, you know how fiddly and time-consuming it can be making sure all the labels are printed correctly. Well now all that's a thing of the past. Because Mailshot actually shows you the labels on screen, you can type names and addresses in exactly the correct place. But more than that, the labels are animated on screen as a continuous sheet, allowing you to scroll backwards and forwards, to search for particular keywords or to edit entries with the minimum of fuss. Facilities include searching, detection of duplicate labels, sorting (even surname!) 9 labels across, 999 copies of any label. This has to be the simplest and most effective method of creating a mailshot available.

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All reports may be produced at any time, with comparative/budget figures if required. The facility to produce these documents quickly, accurately, and regularly is of enormous help in running any business, large or small, since one shows the true profitability achieved, and the other the exact strength of the business in terms of assets and liabilities.

£29.95

E-TYPE

Do you ever have to print names and addresses at awkward places on envelopes, or do you ever need to fill in tricky forms or invoices where the text has to be in exactly the right place? Usually you have to do it by hand, or get your trusty old typewriter out of the cupboard and dust it off. Well not anymore. The Emulated TYPEwriter transforms your computer and printer into a fully fledged typewriter, supporting bold, underline, italic and other type-styles. Because it can display and print text INSTANTLY you can line up your form, press Return and Space a few times to move to the correct place, and then start typing. Alternatively you can switch to line-by-line mode, which offers word-wrap, justification and proportional spacing, so that you can edit each line before it's printed.

£39.95

MAILSHOT PLUS

Advanced version of Mailshot for the business user with the following extra facilities:
* integration with other software (using ASCII files)
* column/tabulated summary (ideal for telephone lists, etc)
* 4 extra memo lines per label (with defaults) * system for coding, dating and adding messages to each label
* different layouts available for horizontal and vertical justification.

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CLASSIC INVADERS

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** STOP PRESS **
July '89 – PTP user receives tax refund of over £2,000!!

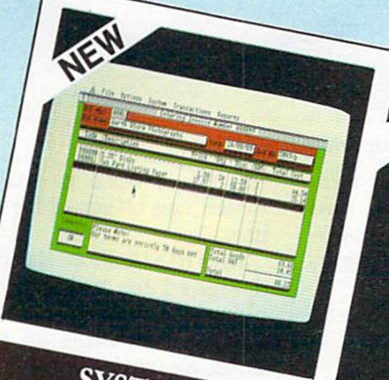
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Use your computer as a powerful business tool and take the drudgery out of book keeping! In its simplest form, the program will replace your Cash and Petty Cash books BUT Digita's program, in effect, does much more. Typical information includes: • Summary of VAT information to enable completion of VAT Return. • Monthly summaries and departmental analyses of sales and purchases. • Total debtors and creditors, sales, and overheads. • Income and expenditure analysis. • Journal routine for entering transfers between accounts. • 199 nominal account titles, most of which are user definable. • Observes accounting procedures and meets legal requirements, assuring correct approach to book keeping. • Full audit trail and integrates with Final Accounts.

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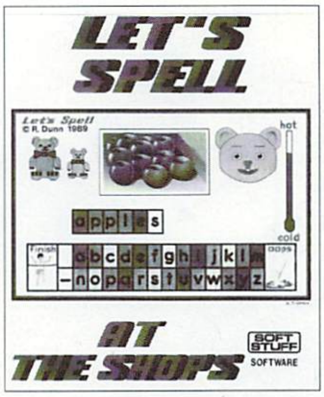
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All software written in the UK. Prices include VAT & P & P (add £2.00 for export)



Lessons from life

ALLOWING children to relate their lessons to real life is an important aspect of education and two packages for the Amiga do just that. They are Let's Spell at The Shops and Let's Spell at Home from Soft Stuff Software (0732 351234).

The programs use graphics and synthesised speech to teach letter recognition and spelling. Conforming to the National Curriculum, they are mouse controlled for ease of use, have four levels of difficulty, print-out options and are interchangeable with other Soft Stuff programs.

Price, £19.95.



When micros take wing

AMIGA owners who enjoyed the RealThings Horses animation kit from RGB Studios (082-581 2666) can now take to the air with the next in the series – RealThings Birds.

For more than a dozen birds, it provides animbrushes of flight in profiles, progressive perspective, underviews, overviews, ground behaviour, flocking patterns and seasonal plumage.

Images have been drawn and painted by well-known bird artist Peter Partington and the package includes demos, clip art and animated scenery.

"RealThings Birds 1 and 2 aim to give Amiga lovers the chance to recreate the fascination we all feel when watching birds in their natural environment", said Robin Grenfell Bilson of RGB.

Full retail price £29.95 with special launch price of £23.95 until July 31.



Fax pack for Amiga

AMIGA owners can now send faxes at the touch of a button thanks to a new package from Michtron (0726 59692).

Fast Fax is a combination of both hardware in the form of an external modem and software which emulates PC fax card functions.

The software features both send and receive modes and can be programmed to send faxes to a number of different destinations at any time of day. A 1,000 entry phone book and comprehensive message storing system are also incorporated.

Communicating with Group 3 fax machines at 9,600 baud, the external modem connects to the Amiga via the RS232C port. Price £690.

As she is spoke..

A RANGE of GCSE courses for the Amiga covering English, French and Maths has been released by LCL (0491 579345).

Each package takes users step by step from age eight to GCSE level and consists of 24 programs, two books and a voice tape.

MicroEnglish covers all aspects of the English language and can also be used as an EFL (English as a Foreign Language) course by running its accompanying voice tape.

Spoken French, vocabulary, verbs and grammar are featured in MicroFrench and the package is suitable for travellers and holidaymakers as well as students.

MicroMaths includes algebra, geometry, trigonometry, statistics and arithmetic. Each course costs £24.

At the fair

AMIGA products will have a strong showing at the second 16 Bit Computer Fair to be held at the Royal Horticultural Halls, London from June 28 to July 1.

A follow-up to the inaugural show held in January, it is again organised by Westminster Exhibitions.

Educational aid for all

RELEASED at the European Computer Trade Show by educational software specialist Scetlander (041-357 1659) was the first of a new series of computer programs designed to help children of all ages with numeracy and literacy.

The series is aimed at providing parents with quality educational software which will run on most home computers and will mean new releases every six weeks this year from the Glasgow-based company.

Called Hooray for Henrietta, the first package is initially available in Spectrum and PC versions but there are plans to convert it to the Amiga in the near future.

"Motivation is fundamental to the learning process", said chairman and managing director Ron Lander. "If you raise this and most important keep it raised, you improve concentration, determination and results.

"Hooray for Henrietta is a delightful program which has performed extremely well during field tests. Since levels of difficulty can be set to suit all abilities, students tend to gain confidence quickly and build on their successes".

Aimed at children from five to 12 but also flexible enough to be used by adults, the package features Henrietta, Hopeless Henry, John the Parrot and the mishaps surrounding the impending marriage of Henrietta and Hopeless Henry. The Amiga version should be out in the autumn and will cost £24.95.

No show for portable

THE new portable Amiga from German manufacturer Gigatron (see Amiga Computing, March) failed to make its expected debut at the recent CeBit '90 show in Hanover.

Staff at Gigatron are working hard to get the machine completed within the next few weeks but a question mark hangs over its current negotiations with Commodore.

While Commodore is not involved in the development of the machine, it is not yet known if it will buy the rights to it. If not, it may still have to give its approval to any launch, since Gigatron's portable contains a number of customised chips.

Snatch a fast sample

USING a state of the art 8 bit analogue to digital converter chip capable of more than one million samples per second, the new MKII stereo sampler from Trilogic (0274 691115) is claimed to be the fastest sampler on the market.

It allows high frequency signals such as those found in CD quality audio to be accurately digitised for high quality and features an easily accessible input level control with no screwdriver needed. The Stereo Sampler MK II is supplied with connecting lead, instructions and free PD disc with demo versions of Audiomaster and Perfect Sound for £39.99.

If bought with the Audiomaster II stereo sampling software there is a special price of £89.99 – a saving of £29.99.



New modem speeds links

BILLED as "a breakthrough in data communications", the new EuroLink multi-speed modem has been developed in conjunction with MicroLink, the electronic communications service.

It can handle speeds up to 2400 baud (40 words a second), is Hayes compatible and incorporates an extensive range of features including auto dial, answer and redial, baud rate scanning, auto-terminal baud rate sensing and 32 entry number store.

Despite the high technology incorporated into the EuroLink modem, it is easy to use with a specially designed facia which substitutes clear wording for the confusing initials often used on other models.

Although it can be used with other systems, the EuroLink modem has been developed with MicroLink subscribers in mind. It comes with an Amiga software package which allows automatic connection to MicroLink – and incorporates MNP4 error correction for trouble-free data transmission.

Available from EuroLink (0625 878888) the modem package, including free registration to MicroLink and VAT, costs £254.95.





Gallya Ornamented

Neat line in type

A NEW line of professional, high quality fonts for PageStream on the Amiga has been developed in New York by Dennis Palumbo (0101 516 352 5605).

Using 36 point screen fonts, the new line is designed to improve screen resolution. It features Gallya Ornamented, Kooper Black and Plaebill typefaces including upper and lower case letters, numbers, punctuation plus foreign and special characters.

"The 36 point screen fonts are unique in that no other producer of Page Stream fonts includes them as a regular part of their complete line", claims Dennis Palumbo. "A bonus included with this disc is the public domain 36 point Helvetica screen font".

Each font contains a minimum of 184 characters and comes with a 90 day warranty. Until June 1, there is a special introductory price of $29.95 US with $2 for shipping. Dennis Palumbo can be contacted at 104 Barrymore Boulevard, Dept B, Frankln Square, New York 11010.

Exams time for Amiga

KOSMOS Software (05255 3942) has been working on Amiga conversions of its six most popular educational packages aiming at a June release.

Four titles will suite the needs of beginners, GCSE and advanced language students. They are The French Mistress, The German Master, The Spanish Tutor and The Italian Tutor. Including large vocabularies, they allow students to choose from a range of learning and test modes and also to create their own special lessons such as homework or revision lists.

For ease of use, the vocabulary is arranged under 32 separate headings such as the family, the dwelling, vehicles, substances, parts of the body and food and drink. There are more than 2,500 items of vocabulary. Price will be £19.95.

Rounding off the Amiga conversions will be two educational quiz programs – Answer Back Junior and Answer Back Senior. They combine databases of general knowledge questions with simple games. Each program contains 750 questions spread over 15 topics.

Junior subjects include nature, music, nursery rhymes, books, poetry, sums and spelling. Senior questions include science, history, geography, literature.

Answer Back also costs £19.95.

Accent on acumen

SERIOUS games players have three new offerings for the Amiga from CP Software (0993 823463).

The Oxford Softworks Chess Champion 2175 is an updated and improved version of best-selling Chess Player 2150. It combines the power of the original program with expanded features including opening book control and greatly improved playing strength. Price, £29.95.

Backgammon Player Professional is a fully featured computer version of the ancient oriental game. It includes dice and doubling cube, variable playing speed and full scoring. Price, £19.95.

Go Play Professional for the Amiga features Go, the oriental equivalent of chess which is so complex it was considered unprogrammable. Price, £29.95.

Each of these games is available in French, German and Spanish as well as English and were appropriately launched at the European Computer Trade Show in London.

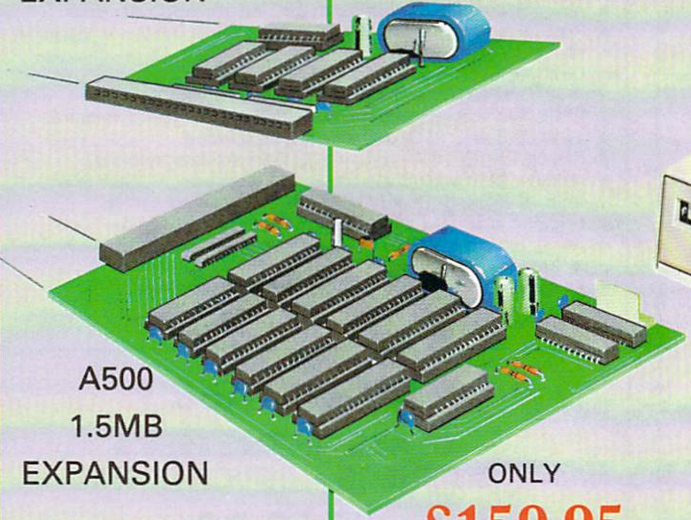
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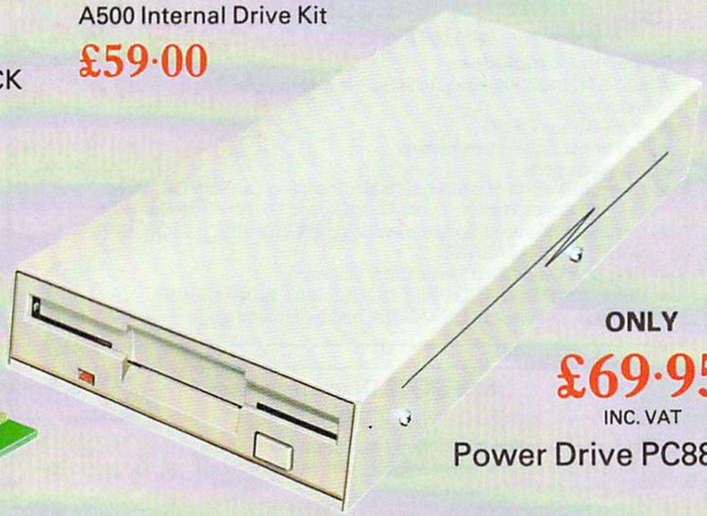
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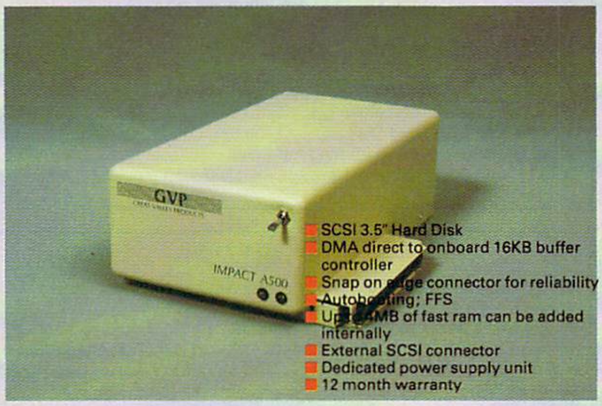
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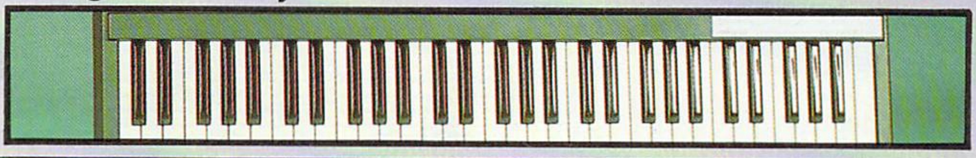
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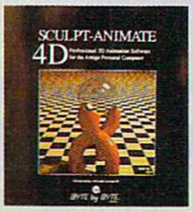
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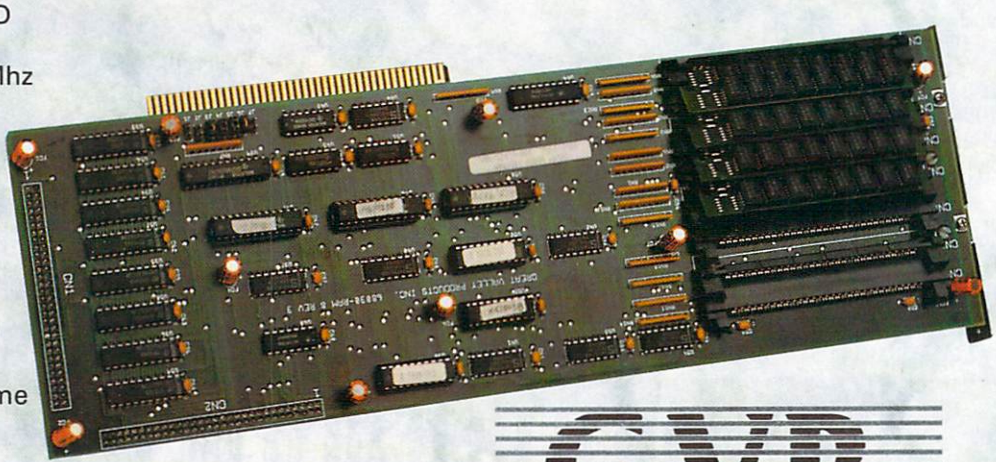
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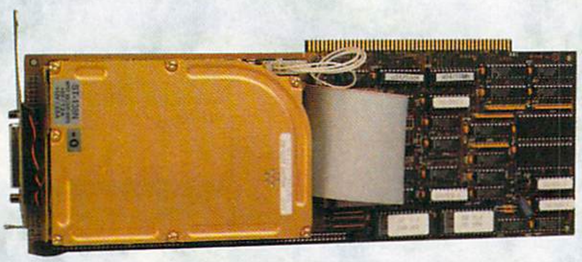
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Hi, I'm the new mail man. Man. It's my job to sort your scribblin's and spill the beans on the problems we all have when DF0: starts to whirr. So if you've got something to say, say it to me.

The best letters will be sent prizes of up to £100, so get a copy of Protext into your drive pronto. Drop me a line at Ezra Surf's Postbox (ESP), Amiga Computing, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP.

Ezra



Star letter

I HAVE recently bought a Star LC10 printer for my Amiga and am experiencing some frustrating problems when I use it with The Work! software.

When I load Analyse it will not print graphics and comes up with a "printer not available" message. When using it with Scribble, even though it shows up on the short test routine, the pound sign prints as an L.

I have set the DIP switches to British character set and have set Preferences to EpsonQ, the nearest printer mentioned on the Amiga list.

Andrew Cairns,
Strathclyde,
Scotland.

The EpsonQ printer driver is for Epson compatible 24 pin printers. Setting Preferences to EpsonXOld or EpsonX[CBM_MPS-1250] will get better results.

Jeff tells me he has found a bunch of Star LC10 printer drivers released by Commodore on the 01 for Amiga bulletin board (071-377-1358). I'll see if I can persuade him to sneak them on to a future cover disc.

In search of perfection

I SEEM to be missing something in my life. It isn't the grouse because there are plenty here in Scotland and I am having a few in this letter.

The Amiga seems to attract an aura of Wysznawyg – what you see is not always what you get. Many of readers' letters seem to confirm this.

Despite hyped promotions and luxury packaging from which the rays of the sun shine in more-than-oriental splendour with price tags to match, in many cases there are glaring errors and/or omissions.

OK, mistakes happen when working to tight schedules, but it seems to be the parts you are not told (even in reviews, sometimes) which make the heart beat faster and the wallet grow thinner.

Everyone complains about the original Commodore documentation and programs. The answer is to buy better books, languages and so on. But the rest of the commercial world seems little improved; many programs require further purchases to be useful – fonts and debuggers for example – and some "professional" packages will only work with certain configurations.

Even your magazine is getting to this error and omission stage: The February front cover still shows 1989 date and the boxes on page 78, Getting Better and Let It Be, are the unfinished symphonies of Music- X.

It would be nice to see Amigaware getting better, but at the moment I feel inclined and would advise others to let it be until the bugs, quirks and companies concerned have sorted themselves out.

Alan Bee,
Inverness,
Scotland.

Sounds like you've got the I-want-something-for-nothing disease to me. Do you honestly think it would have helped if Commodore had bundled the Rom Kernel manuals with the machine? Sure, the techie programmers would have been over the moon, but to you and me those books are a thousand pages of gibberish.

People use computers at different levels. Many are quite happy with what they got in the box; these are the first time buyers with no experience of how a computer can change their lives. Next time they buy a computer they'll want more.

Others, like yourself, find that what they have bought doesn't stretch them and are annoyed that they have to go out and spend more money on software and hardware.

But that's life, chum. There's no free rides on this merry-go- round.

The program hasn't been written that contains no bugs. People who can't program don't understand this. When they buy a bucket they don't expect to get home and find a small hole in it. When they do, they whinge very loudly.

But computer programs are not buckets, and the hole can almost always be patched up by telling the software house (not the retailer) what you've found and waiting while they fix it.

These patched programs are called upgrades and can be distinguished from one another by their version numbers.

Me, I'm not interested in perfection. It's the little mistakes we make in life that prove we are still human, click, still human, click, still human, click....

Cover girl mix up

IMAGINE my surprise when I recognised the March cover photograph to be the spitting image of myself. Having shown the picture to both family and friends, the general feeling is that this is, in fact, a picture of me.

I would be very grateful if you could clear this up for me as the likeness is so apparent to other people, including my mother, who says that she would be prepared to bet her last penny on it.

David Bulwer,
Eastbourne,
East Sussex.

Take the bet. The picture was of our Technical Editor, John "AJ" Kennedy, who has almost bankrupted us by sending out free personally autographed issues to all his girlfriends.





Buttons and balls

VERY happy to see your article on mice. Mine gave up after one year, not with the symptoms you have described though. The buttons have been fine, my problem was rust on the rollers and the chrome deteriorating, causing the ball to ➤

stick. I now have myself a Contriver mouse, which so far agrees with your report except that you didn't mention that when you get the mouse you have to use the ball from your old mouse, so don't throw the old one out!

VC Langley, BFPO 6.

Are you saying that your Contriver mouse came without a ball? If so, phone them and whinge.

Expansion worries

MY A500 has insufficient memory to run a word processing package and I want to buy an expansion module. Would you please advise me whether fitting such an expansion affects my rights under the purchase guarantee.

SA Blanks, London SE9.

You can fit many half-megabyte internal ram expansions, for example the official Commodore A501 unit, on to the bus provided underneath the A500 without invalidating your guarantee.

Larger expansion boards require you to open up your Amiga and fiddle about a bit. Unless this is done by an expert recommended by your Amiga dealer you can wave bye-bye to your warranty.

Keen on comms

COULD you please advise me on one of the best comms software for the Amiga. I am using a Linnet 1200 modem with MicroLink, on an A500 with extra ram.

Lee Kitching, Hull, Yorkshire.

The two best Amiga comms programs are both in the public domain, released as shareware.

Access! v1.42 is generally accepted as the easiest to use, although it doesn't cater for Zmodem and the author appears to have ceased development.

JR-Comm, on the other hand, is very much still being worked on. The last general release, v0.94a, has many advanced features and is the program I use.

By registering at a cost of $40 you will be sent the official 1.0 release which, at the time of going to press, is imminent (we're up to gamma version 0.99n).

Both these programs will be available on disc from any reputable PD pusher or can be downloaded from any Amiga BBS worth its salt.

Lamer tamer

IT may be of use to the readers of your excellent magazine to know of one of the effects of a particularly nasty virus doing the rounds.

I recently had a problem with a few read/write errors on a couple of discs. When this happened to my Workbench disc I tried to make another copy, only to find that although the drive light came on, nothing happened. The message stuck at "reading 0, 79 to go".

Any attempt to copy any of my other discs produced the same effect.

Since the discs worked normally otherwise, and as I am new to computers, I took my Amiga back to the dealers, Gordon Harwood Computers. As always they were very helpful. When they cleaned the heads for me and tested it with one of their own discs it seemed to work OK. They suggested that I get a virus killer, and they would be happy to check my discs for me if the problem continued.

When I got home I found that the machine still would not copy any discs. A telephone call purchased a copy of VirusX 4.0 and the culprit was found. Virtually all my discs were infected with Lamer II. The virus killer was equally effective at destroying the virus as at finding it. Now everything works properly again.

Alan Parsons, Burton-on-Trent, Staffordshire.

I am interested that you "purchased" a copy of VirusX 4.0. Do tell me who sold it to you, and how much you were charged.

Angry swapper

I FIND it very annoying to have a program that comes on two or more discs to find that it still wants me to play ping-pong with the internal drive, while the other sits there gathering dust. Yes I know that by not using the other drive you save 30k. Big deal!

Program writers have got some 400k to play with, 30k isn't going to make much difference. After all, Commodore 64 programmers still put out some amazing programs in its tiny memory.

However, if 30k does mean so much, what about loading it in from one of the drives? It's what they're there for. If it's still not practical, what about the half meg expansion users?

It should still be possible to have the ability to use both disc drives if you have a memory expansion, even if you have to switch off the task priority of the disc drive when it's not in use to make best use of the processor power of the Amiga.

I think that when all has been said, making people use a single drive is not on. It's sloppy programming and, worse than that, it's going back to the way the 64 used to work. There is no excuse for it.

Thank you very much for reading my thoughts. Now I must go back into my comfortable jacket. One day I might work out how to get my hands out of these damn sleeves....

Carl Beech, Stoke-on-Trent, Staffordshire.

The Amiga games industry is beginning to wake up to this extra drive and ram problem. Games are being produced that work with more than one floppy drive and use the extra ram if it is there. But they are few and far between and I suspect it'll be a cold day in hell before you persuade the companies which produce the quick ST ports of coin-op conversions to do anything but trash the OS and jump illegally into rom.

Learning curve

RICHARD GRAY is quite right (Letters, February). What the heck is an OC command? I wrote the article and I tried to explain what I was talking about, but it helps to be reminded that a program like Protext isn't plain sailing – can be quite intimidating in fact.

Large programs are normally quite frightening to begin with. I used Protext for six months or so without using an OC command, but in time you sit down with the program running and the manual open and you read magazines.

Gradually you get familiar with the thing, and that's how you find out that OC commands send raw numbers to the printer.

This isn't an isolated discovery; it happens around the time that you realise how printers are driven, and you sus out the escape codes. After you've understood that, the first thing you do when you get hold of a printer (it happens every day...) is look up the control codes.

So you learn about printers and about Protext simultaneously, and learning about the one influences your attitude to the other.

That's true of any program that's got real power. You can do quite a lot of simple stuff straight away, but beyond that even the friendliest Wimp front end can't replace manual learning and exploration.

That's true of word processors, certainly true of databases, and doubly true of a programming environment, where you're learning not just the program but the process that you carry out with it.

I don't think this is a totally satisfactory state of affairs, but then I was trying to think of anything at all beyond the dumb basic level that's any different. Microwaves? Not even. Certainly not video players. Driving a car? Time to crash....

So if you're a commercial user you take a course, and if you're spending your own money you browse and play and read the manual in bed.

It takes money or it takes time, but it takes. A cup of tea does help.

Peter Ceresole, London W14.

Seek and ye shall find

ON reading the February issue I noticed a letter from Graham Hy of Edinburgh in which he bemoaned the death of your column devoted to adventures.

I have to say that I agree wholeheartedly with him. It was one of the best columns of this type, dealing in depth, as it did with just one or two adventures per article.

JD Heywood, Portsmouth.

Therein lies the problem – just one or two adventures per article. Adventures (aka role-playing games) are being released at a phenomenal rate, up to a dozen or so every month. To be able to cover the best of the crop as quickly as

possible, we moved the adventure reviews into the normal games reviews pages.

If you have a closer look you'll find that we have managed to increase, not decrease, the pages given over to adventures and role-playing games. I suspect what you really miss is the excellent Tim White artwork.

Font finding mission

ACCORDING to the WB 1.3 Enhancer Manual, FF (Fast Fonts) can also be used to replace the default system font with a plain 8x8 pixel font. However, after defining an 8x8 font using FEd, I cannot replace the default font with my own.

I have tried using the fontname, path, cd-ing to the font dir, copying the font to ram, all to no avail. I can't even load Topaz 8 point. Any ideas?

Brian Nisbet, East Kilbride, Scotland.

FF will only work with non-proportional fonts, that is, fonts which give exactly the same screen space to every character – eight pixels high and eight pixels across.

A number of public domain programs allow you to replace the default fonts with any other. Any reputable PD pusher will be able to help you.

Automation

THERE are two things I've discovered that will seem very simple to computer experts. But I find both useful in using an Amiga for semi-business purposes.

When I turn on my Amiga with a word processing disc in its second drive I want the WP program to load automatically, without having to click on various icons to get there. But if I have put a spreadsheet disc in the second drive, then I want the spreadsheet to load.

As a computer illiterate it took me a while to realise that the way to do this is to use CLI to alter the startup-sequence by adding, just before the end:

```
if exists df1:aprog
execute df1:aprog
endif
```

Then on the WP disc you use Ed to create a script called aprog along the following lines:

```
say "Now loading WP"
cd df1:
Scribble! ;or whatever
cd df0:
```

and so on with any other disc you want to load automatically. If there is no disc with an aprog script on it in the second drive, you just get the workbench in the normal way.

HC Rumbelow, London SW19.

Dodgy distributors

THE distribution system for home computer software and extensions are inefficient, infuriating and all too often criminally incompetent. It should be improved.

There are many reasons for this. Asking the retailers, you receive a great many explanations why. Some say it is the software houses, who promise to release the program next month so the retailer produces an advert counting on that. Then the software house doesn't release the program until four months later.

Others say it is the crackers who, by violating copyrights, remove the necessary economic foundation for a proper distribution.

The users' reasons are somewhat different: It is those damn get-rich-quick artists who set themselves up as retailers because they have heard it is "the future" with lots of money in it, they don't care a hoot about computing or their customers, they just want the money.

Or it's the computer manufacturers who, every year or two, make a new kind of computer which can't use any of the software you bought for your old one?

The crackers say that if the retailers delivered what they promised in their ads, and if the software houses did not charge such ridiculously high prices for their games, there would be no need for their Robin Hood activities, and nobody would want the often rather miscopied copies of programs that they make.

Do you really think anybody would go to all that trouble – spend a month or two cracking a game without getting paid – if he had not been badly burned and frustrated trying to buy games legally?

The reason most crackers live in other countries like Holland, Belgium, Germany and Denmark is because the situation there is even worse than it is in Britain.

It is all true. We need to change.

Jakob Aggernaes, Copenhagen, Denmark.

Cracking up

MY computer has developed cracks in the plastic. I haven't bashed it, they just appeared. It doesn't get too hot in my room, so I can't think how they got there. Is there any explanation?

Jalil Purton, St Albans, Hertfordshire.

Haven't the foggiest. But don't go looking in too many mirrors.

Where do we go from here?

WHAT'S been your most enjoyable game? I know mine, it was Atic Atac on the Spectrum. Why? Well, back in the good old days when computers were a new thing to the home user, nothing quite like them had been seen before. Games such as Atic Atac, Manic Miner and Jetpack amazed everybody who saw them.

They were instantly addictive and totally playable. Nowadays computers are no longer new to us; once the user came to grips with the 8 bit micros he wanted bigger and better. Enter the 16 bit machines.

What next? 32 bit micros are too expensive for the home user, and will be for many years to come, and consoles are not versatile enough. Therefore 16 bit will be the limit for most of us.

The point I'm trying to make is that something new always draws our attention so people will start to look elsewhere for their kicks.

I have owned a Spectrum and C64, presently owning an Amiga. While owning a Spectrum I would play virtually any game, on the C64 my choice narrowed down, and with the Amiga I only really play two types of games – puzzle solving and role-playing.

Nowadays shoot-'em-ups, beat-'em-ups and the like simply do not turn me on. Many people I know also share the same viewpoint.

I think that during the following years shoot-'em-ups and the like will become more unpopular. Games which do well will be the puzzle solving, strategy and RPG types. Games which will do particularly well will be original ones like Populous.

Denis Cowie, Cleethorpes, South Humberside.

My favourite game was Ant Attack on the Spectrum, which was written in a mixture of Basic and machine code and only came on microdrive if I remember correctly. Ah for an Amiga version...

There are games programmers out there who solemnly believe that we'll jump straight from 16 bit to 64 bit home computers. Some are even developing in theory now in preparation for the big day. Bunch of nerds if you ask me.

Worth the wonga?

DON'T stop reading this letter because its about piracy and software cost again. Stop and ponder at this...

Tell me why £25 to £50 is the acceptable price for Amiga games and why the ST versions are often cheaper. I can tell you why. It's because we are stupid enough to pay that price for it!

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All our money goes into piracy protection techniques. Why don't they sell the software for a price between £5 and £15, then everyone could afford it and not so many people would be interested in ripping off copies of the software. Do we see Code Masters and Mastertronic going bust? I doubt it.

The music business has the same problem as software suppliers. Do you see them sticking a dongle on the album or giving us a glass prism to stick in our ear so we can listen to a cassette? No. They market their products at a reasonable price and they make a healthy profit.

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CJ Clarke,
Newbury,
Berkshire.

LPRINT no work

ACCORDING to the Amiga Basic Manual and Amiga Basic Inside and Out, I should be able to use the Star LC10 escape codes within the LPRINT command, but for some reason they are being ignored.

Do I have a fault with my Amiga, LC10 printer, or am I using the wrong driver?

S Mallon,
Honiton,
Devon.

No worries. To send printer control codes from Amiga Basic you don't use LPRINT, you open a file to the printer and send them as parameters in the CHR$ function. For instance:

```
OPEN "PRT:" FOR OUTPUT AS 5
PRINT #5,CHR$(12)
```

which would send the normal printer code to throw a new page.

Sid upgrade

THANKS for Sid and the return of the cover disc. After reading those magic words in the April issue, I thought to myself "Mass Telepathy". I'm glad you have risen to the challenge.

I have put Sid into my startup-sequence so it's loaded automatically SID RAM: DH0:. I'd like it to boot up SID VOL RAM: but we can't always get what we want. Or can we? Have there been any improvements to it? And will we be getting the upgraded version?

Dave Nosurname,
Notown,
Nocounty.

Jeff says the latest version of Sid is 1.06, and there have indeed been quite a few improvements. Like having Sid load from the startup-sequence in shrink mode.

C'mon, Dave, you know how to get the latest version. Register with Timm Martin, the author. And tell him about the VOL bit, sounds like a good idea to me.

April fools

IN your April issue you published a review on the Amiga Soundblaster which looks reasonably good. It is priced at £44.99 and, after reading it, I thought no more of it until I came to a special readers offer where I see Soundblaster selling for only £34.99.

It was hard to believe, I thought. A brand new product like that! It's amazing, *Amiga Computing* are simply the best. Then all of a sudden I come back to reality. It's for the &#(!?) Atari ST!

Please could you explain to me why any Amiga user is going to want to make use of the Atari ST's "amazing" sound quality? And why are you singing the ST's praises? And as much as I admire you all, I am going to have to report you to the AASTA (Anti Atari ST Association) for treason.

Then again, seeing as you regularly produce such a high quality publication, I am going to have to let you off.

Mark Jones,
Chigwell,
Essex.

The editor wants me to tell you it was an April Fools joke. But being the cool guy I am, I'm not scared to admit that it was an almighty cock up. The advert was pinched from our sister magazine, Atari ST User, and somebody forgot to change the text.

Evan'll fix it

RE Grabbed by the Gauls, Amiga Arcade, page 17, December 1989. Yes, the December 1989 issue of *Amiga Computing* has just hit the shelves here in New Zealand.

In that issue the question of who is Panoramix is raised. The answer is that the French version of the comic book has the druid we all know as Getafix pottering around under this nom-de-guerre.

Hang loose and keep those Amigas humming.

Evan Yates,
Auckland,
New Zealand.

Naughty man

I HAVE just bought an Amiga 500 from a shop that offers very little in the way of useful advice. I am struggling slowly with the workbench and starting to get the hang of it.

What I really need, which the man in the shop told me the workbench was, is a word processing package. I want to be able to store video catalogues and be able to keep pages of text under various titles. I write a great deal and need it to be kept orderly and easily accessible.

The only thing I've seen that looks suitable is The Mini Office, but this is only available for the BBC Micro.

Please help me by recommending something you think is suitable, as I can't use my computer for the secondary purchase reason. Yes, I have to confess that I bought it mainly for games.

Millah Adams,
Worthing,
West Sussex.

Fancy telling you Workbench was a word processor. You should have asked for a demonstration. If he refused, you should have become very suspicious.

Sounds like what you need is

Broken mouse

FOR some time my mouse port has not been functioning correctly and this is quite literally driving me mad.

My mouse had been behaving erratically for some time. It would draw a series of dashes in DPaint, for instance, when I required a continuous line, as though the left mouse button was being clicked on and off repeatedly in rapid succession.

I thought it might have some fluff on its ball, so I cleaned it out thoroughly. For about half-an-hour it worked perfectly, but my joy was short lived. The problem started to occur again.

The right mouse button has always worked normally, as only the left one seems to be afflicted with this mystery illness. No matter how hard it is clicked, it fails to make any sort of response as far as opening drawers in Workbench is concerned.

I decided that it was probably the mouse itself that was at fault, and came to the conclusion that the only answer would be to splash out on a new one. Rather than wait two to three weeks from a mail order company I thought I'd buy one from a retail outlet. What a shambles that turned out to be!

I had to wait three weeks before it was in stock and then paid a massive £36. I got the new mouse home and tested it out for a bit. The first 15 minutes or so was fine, but after half-an-hour the problem had returned.

So, having shelled out for a vastly overpriced mouse, I now assume that the fault lies with the port. I can't afford £50 for some engineer to come and tell me that it doesn't work. In the meantime, my decrepit Amiga 1000 is in serious danger of being thrown through a plate glass window in a fit of rage.

Katharina Spencer,
Basingstoke,
Hampshire.

Nope, sounds like the mouse to me. It's a common problem. Because you use the left mouse button more than the right one, it's the first to go. The problem lies with the flaky switch mechanism Commodore uses.

The only answer is to buy yourself a mouse that uses microswitches under the buttons. I recommend the Naksha mouse. It comes with a mouse house and solid mouse pad which I've found much better for detailed work in DPaint.

Sorry, sold out

THIS is for all readers who do not subscribe. Picture the scene. It is about that time of the month, the time when you start to thinking, is it in the shops or isn't it?

So you wander down to your local newsagents and peruse the computer section for your fave computer magazine. What do you find, loads of copies of last month's Ess Tee mag, loads of copies of this month's Ess Tee mag but no *Amiga Computing*, last month's or this month's. So you try another shop, and another, until you have visited more shops than a Mars Bar rep.

I know this happens, I've done it. But now I subscribe and things are different. No longer do I walk the streets like an Ess Tee owner looking for a games arcade searching for THE magazine. It drops regular as clockwork on the door mat.

So don't think about subscribing, *do it*. It'll save you a lot of heartache as well as shoe leather.

K Bucchan,
London N18.

Every month we increase the print run, every month we get letters like yours. The best bit about subscribing is that you get to see the mag about a week before everybody else. For those still not convinced, Amiga Computing hits the streets on the first Wednesday of every month.

The Works! Platinum Edition. It contains a word processor, database, spreadsheet (with graphics) and telecommunications program. Check out the mail order adverts, I've seen a number of companies selling it.

However, to use your A500 seriously you're almost certainly going to first need more ram and at least one external floppy drive.

Now with added oomph

I HAVE read every issue of *Amiga Computing* since June 1988 and am pleased to see that your cover illustrations have returned to a more dignified approach after the previous six months of lurid Fiendish Deja Ninja Assassin screenshots.

Being 32 years old I feel a bit silly queueing up in my business suit to pay for a magazine that looks like Spotty Teenager Monthly.

Anyway, on to a more serious topic. Your cover shot of the DTP stuff raises a few a couple of questions: Why does Nic Veitch paint his fingernails red and now that you are an an Interactive Publication rather than A Database Publication, will you make an effort to reduce your 2,592,000 second response times?

I look forward to you becoming an Online Publication and then a User-Friendly, Mouse-Driven Publication.

Ian D Wilson,
Little Staughton,
Bedfordshire.

Ready, aim, fire

I AM told that there are ways of printing hidden pictures and have seen a few examples. How is this achieved on the Amiga?

What does the PrtSc key do, and do other keys have to be pressed too?

What is the cheapest external modem you have seen that supports both Prestel and Micronet?

Does *Amiga Computing* have its own Bulletin Board?

Mark Kinslow,
Rochester,
Kent.

Hey dude, what's this hidden pictures stuff? Don't have the first idea what you're on about.

With the GB keyboard configuration, the PrtSc key displays an asterisk on the screen. The words you can see on the fronts of the keys are there for PC compatibility if you're running an emulator.

It's not modems that support BBS systems, it's the software. RubyView is about the best Prestel software for the Amiga on offer at the moment, although I've heard a rumour about a new Australian package called GPTerm that sings and dances. Keep your eyes open for that one.

No, Amiga Computing does not have its own bulletin board, although we're active on CIX (amigacomputing), on MicroLink (MAG001) and in our own section on 01 for Amiga.

What a mistaka to maka!

I THINK you are trying to persuade us that more is less, or is this a cunning and devious plan to change the office motto by Daniel Schostak. Yes I refer to his letter in the March issue about installing DF0:

Would it not be a lot easier to type INSTALL ?, the Amiga then prompting with DRIVE/A:. Then all you have to do is remove workbench, insert the disc to be installed and type DF0:

Simple eh!

Ian Mellor,
Wallington,
Surrey

Operation Bad Taste

I LIVE in Monkseaton, Tyne and Wear, where a gunman ran wild last year. I knew the man killed. I totally agree with John Kennedy in his review of Operation Thunderbolt in the April issue. I now refuse to spend my money on games of this type. It is definitely not funny any more.

Iain Hudson,
Monkseaton,
Tyne and Wear.

Printer lead

I HAVE got an Amstrad DMP2000 printer which is connected to a BBC Micro. I also have an Amiga 500. Please could you tell me if I can connect the DMP2000 printer to my Amiga, and if I can, where can I get a lead and what name would the printer be under on the workbench disc.

Andrew McBain,
Elgin,
Moray.

You need just a normal parallel printer lead, like the ones IBM PCs use. Try The Computer Store on 021-770 0468. I've not got a DMP2000 to test this on, but I guess the driver to use will be EpsonXOld.

Olivetti driver

I OWN an Amiga 500 and an Olivetti DM 100-S. The trouble is, even using the generic printer driver I don't seem to get results. Can you tell me where to get a proper driver, please?

Edward Christian,
Dorchester,
Dorset.

I don't know this printer. Try every driver you've got. If none works contact Commodore on 0628-770088 to see if anybody's written one yet.

Double dutch delight with disc

AFTER doing some reading in the April issue I decided to break out my text editor and write you folks a letter. No Protext for this one, though. I'm hooked on MicroEmacs as supplied on the Extras disc, which is supported by Blitzfonts from your January Cover Disc.

Your disc is so good it can only be capitalised, not so much because of Blitzfonts, which I do appreciate, but mainly because of Sid. Timm Martin (the author) has sent me v1.06, which is a great improvement on an already great prog. Which means you're due for some credit since it's your mag that confronted me with Sid in the first place.

Apart from what Sid can do, which is a lot, the great value is that it cost me blood, sweat and tears. But then, the rocks on Glory Road are rarely mentioned. I got it working, installed on a stripped Workbench disc. A Workbench 1.3.2 of course, another great thing I got from you. All in all, you cost me a lot of skull sweat and made me improve a great deal. Thanks.

It should be clear by now that your Cover Disc has been a major argument to buy your mag. And then you dropped it! Still, I saw no reason to complain. After all, you gave such a reasonable explanation for dropping it.

I've been regularly buying your mag since the November 1989 issue, my computing career having started on October 17, 1989. I never missed an issue, although in the shop where I bought your April issue it turned out to be the only one, which says something about your popularity in the little country by the sea. Believe me, the shop where I bought it is seldom understocked.

It's only honest to say that I sometimes buy English Amiga magazine whose names need not be mentioned here. One of them sports its own bleak excuse for a cover disc (certainly not capitalised). The return of The Disc is certainly going to mean Mayday for certain mag folks, which probably explains your timing. (Deep thought, that one.)

So congratulations, as far as I'm concerned you're the only one for me again.

And yet nobody's perfect. Your Gimme132 script does have a glitch. Ever tried it on a half meg machine? I did, and kept hitting a ram disc full message, until all of a sudden, after a warm reset, it worked as instructions. To the letter.

My keeping at it must be the Dutch stubbornness. The dike builder's blood, I suppcse. The sailor's salt that's coursing through my veins as well, naturally.

Whatever, I'm getting impatient already. One whole month till I get your next Cover Disc....

Jans Poldermans,
The Netherlands.

Hmmm. We tested Gimme132 on two half meg machines, 1.2 and 1.3 KickStart, and it worked every time. Yet a number of people have written in with the same ram disc full problem, who then went away and managed to get it to work, as you did. Strange.

Well done for registering Sid, we totally agree with you about the improvements Timm Martin has made. If you want a better and more Amiga-like text editor than MicroEmacs, try the shareware program, QED. Runs like the wind. Faster than Protext, even. I'll see if I can get Jeff to put it on the Cover Disc.

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The CODE CLINIC

Your programming problems solved by the man in the white coat, John Kennedy

JOLYON RALPH's assembler series provoked immense interest among *Amiga Computing* readers. It would seem that a great many potential coders are interested in using the Amiga at low level, but simply don't know where to start.

Jolyon helped with the first few steps, but here in the office we have received many letters and calls from desperate people whose first utterance is to the effect that the listings didn't work, finishing with the immortal words: "I typed it in exactly as it was in the book".

I know Jolyon's listings definitely do work because I have typed them in myself. It would seem that a great deal of the problems resulted from would-be programmers using strange assemblers given away free with certain other magazines.

The main reason for lack of success could eventually be traced to failing to make use of the chip memory option from within most assemblers.

The Amiga has several flavours of random access memory (ram), including chip and fast. The bare A500, referred to as vanilla by jargonists everywhere, comes with 512k of ram, all of the chip variety.

Chip memory can be directly accessed by the custom chips in the Amiga, and this is where all graphics and sound data must be stored. On a bare A500 you have no choice but to use chip memory.

However, once you add a memory expansion you suddenly have another 512k of ram available, ram that cannot be accessed by the custom hardware directly. Unless you have fitted the Extended Chip Set, but that's another story.

This memory can take priority when executing programs, so after assembling and including your carefully planned code and data, you might have accidentally placed it in a location where the Amiga can't see it. If this happens, your copper lists might remain totally blank, your sprites invisible and your sound effects inaudible.

For this reason most assemblers have a "chip code only" option which is placed at the start of a program. Typically, something like:

```
section myprogram,code_c
```

If you leave this out, or put it in the wrong place, the assembler will put the code anywhere it pleases, with unpredictable results.

```
**********************************
* Example machine code listing to *
* display five bitplanes.         *
* Please note that the complete   *
* version is on the cover disc.   *
**********************************

* Insert the addresses of the five
* bitplanes into the copper list.

        move.l #screen,d0
        move.w d0,pl1l
        swap d0
        move.w d0,pl1h

        move.l #screen+10240,d0
        move.w d0,pl2l
        swap d0
        move.w d0,pl2h

        move.l #screen+20480,d0
        move.w d0,pl3l
        swap d0
        move.w d0,pl3h
        ....
        ....
* and so on for other two planes.
        ....
        ....

* Activate new, improved copper list.

        move.l #new,COP1LCH
* Where COP1LCH is the copper register
* address, effectively $dff080

* Wait until mouse button pressed.

loop:
        btst #6,$bfe001
        bne.s loop

* Put old list back.

        move.l old,COP1LCH
        rts

* Here is the new copper list.

new:

* Bitplane pointers,
* one for each plane.

        dc.w bpl1pth
pl1h:   dc.w 0

        dc.w bpl1ptl
pl1l:   dc.w 0

        dc.w bpl2pth
pl2h:   dc.w 0

        dc.w bpl2ptl
pl2l:   dc.w 0

        dc.w bpl3pth
pl3h:   dc.w 0

        dc.w bpl3ptl
pl3l:   dc.w 0
        ....
        ....
* and so on for other two planes.
        ....
        ....

* End of copper list.

        dc.w $ffff,$fffe

* Screen data.

screen: incbin "mypic.bitmap"
```

Listing I

➤

If your code refuses to work and you have a memory expansion fitted, try removing it. If it works then, you know your code needs to be in chip memory. C compilers also use a keyword to precede any data which must be carefully placed. The moral is: If it doesn't work, try chipping it.

The first problem for those who did get JR's articles working, was how to get more than one bitplane displayed on the screen. A typical letter is this one from Jim Whitfield in Twickenham, Middlesex.

"I managed to display a one bitplane picture, but after following the instructions I failed to display a five bitplane picture. When displaying the picture do you need to type in all the colours or does IFFconverter do it for you?"

This is a common problem, and I'm glad to say it has an easy solution. Displaying five bitplanes is no more involved than displaying one bitplane five times.

Listing I shows how to set up and display a five bitplane image (the full listing is on the cover disc).

The main thing is to remember to set up space for all five planes, and initialise the bitplane pointers for all of them.

The second part of the query also has a happy ending. IFFconverter takes a standard IFF picture file, such as that produced from Deluxe Paint, and changes it into a file of bitplanes, ready to be directly included inside you code. As a bonus it adds the colour information for each pen on to the end of the file.

Figure I details the file produced by a three bitplane image. For a five bitplane image, the colour information part of the file grows to 64 bytes long, using two bytes for each pen. Colour information always makes more sense in hexadecimal.

Once you have your bitplane image displayed in glorious technicolour, you may be surprised to see various sudden flashes of garbage appearing on screen. It seems to be in long thin strips and flashes on and off so quickly that if you blinked you'd miss it. To discover the reason for these manifestations, some analytical thinking is needed. The vital clue is the shape – about 16 pixels wide and in long strips. What do we know that is 16 pixels high and as long as needed? Hardware sprites perhaps?

```
* Additional listing to dispose
* of on-screen garbage.

        dc.w SPR0PTH,$3,SPR0PTL,$0
        dc.w SPR1PTH,$3,SPR1PTL,$0
        dc.w SPR2PTH,$3,SPR2PTL,$0
        dc.w SPR3PTH,$3,SPR3PTL,$0
        dc.w SPR4PTH,$3,SPR4PTL,$0
        dc.w SPR5PTH,$3,SPR5PTL,$0
        dc.w SPR6PTH,$3,SPR6PTL,$0
        dc.w SPR7PTH,$3,SPR7PTL,$0
```

Listing II

And that's the problem solved. To prevent the garbage from flashing on-screen, make sure you initialise the sprite registers. Listing II should be inserted in the bitplane display program to get rid of the garbage. OK, Dave Baker? Happy now?

BACK in the old days when I was using a Vax mainframe, one of my favourite programs was called Fortune Cookie. This miracle of modern technology presented me with a sound piece of advice every time I logged on, helping me to cope with the problems of the day.

I have yet to come across a similar program on the Amiga, so I sat down to write one myself. I had an immediate choice of languages, including Basic and assembler, but I decided on C because I hadn't written a program in C for a long time.

C is ideally suited to producing such small, CLI-driven programs. Cookie compiles to a very small program and can be inserted into your startup-sequence to make your day.

The main problem with writing a fortune cookie program is to produce a random message every time it is executed. Using C's built-in random number generator on its own is a no-

➤

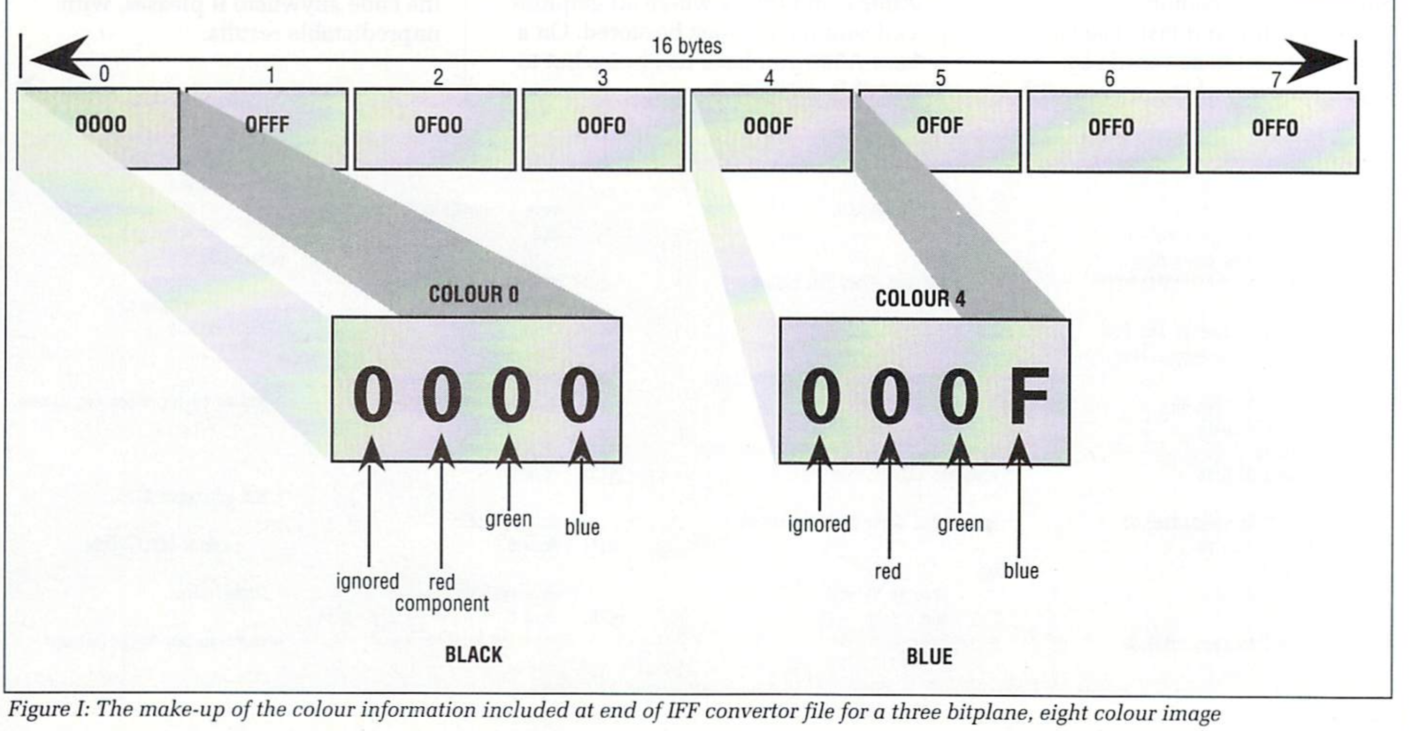


Figure I: The make-up of the colour information included at end of IFF convertor file for a three bitplane, eight colour image

no because its seed – the starting number – is the same each time the program is executed.

I tried using the system clock to set the seed and get a number that was different each time the machine was re-started. This didn't seem to work either, so I had to settle on the sneaky method of using a file on the disc to recall the last message used. I'd like to hear of a better method.

You can see this part of the program in Listing III; the complete working, ready-to-compile version is on the cover disc.

MOST programmers have looked at Amiga Basic, gone "Yuck!" and hidden it away on top of the wardrobe. For those brave enough to struggle through this, shall we say, original and exciting language, the rewards are few and far between. Take this letter as an example, from Alan Stewart of Cumbria:

"I have recently bought my A500 and was disappointed to find that only 25k of programming space is available in Basic. Is there any way I can improve this?"

The answer is yes. By using the CLEAR command you can reserve more space for Basic programs. To start of with you have about 25000 bytes to play with. If you issue the command:

```
CLEAR ,40000
```

you will have expanded this to 40000 bytes, assuming, of course, that this amount of ram can be spared by the system.

Other ways to get around the memory limitations are to use small programs and chain them together from one main menu program, like the examples in Listing IVa and IVb.

```
' MenuSection program
'
PRINT "Example program"
PRINT
PRINT "Please choose option:"
PRINT
PRINT "1. Option 1"
PRINT "2. Option 2"
PRINT "3. Option 3"
PRINT

lp:
INPUT n
IF n=1 THEN CHAIN "Section1"
IF n=2 THEN CHAIN "Section2"
IF n=3 THEN CHAIN "Section3"
GOTO lp:

END
```

Listing IVa

```
' Section1 program
'
PRINT "This is option 1"
CHAIN "MenuSection"
END
```

Listing IVb

To load and auto-run a Basic program larger than 25,000 bytes but shorter, for example, than 70,000 bytes, you will need to write a short loader program, like so:

```
CLEAR ,70000:CHAIN "MainProgram"
```

The relevant sections for CHAIN and CLEAR are on pages 8-28 and 8-33 of the Amiga Basic manual. That's it from me. Have a good month.

```
/*
   Part of a C Fortune Cookie Program by Aj
   This part tries to get a number from a file.
   If the file does not exist, it is created.
   Thus the messages are cycled through one by one.
*/

if ((fp=fopen("cookie.file","r+"))==NULL)
      {      /* File does not exist, so create it */
             fp=fopen("cookie.file","w+");
             number=0;
             fprintf(fp,"%d",number);
             fclose(fp);
      }
      else
      {

             /* File does exist, so get number from it */
             fscanf(fp,"%d",&number);
             number++;
             if (number==32) number=0; /* Reached maximum */
             rewind(fp);
             fprintf(fp,"%d",number); /* Write new number */
             fclose(fp);
      }

      /* Write out the message */

      printf("\nThought for the day:\n");

      switch (number) {
      case 0:printf("First message");break;
      case 1:printf("Second message");break;
      ....
      ....
      case 31:printf("Last Message.");break;
      default:;
      }
      }
```

Listing III

Ram regained

IN the tradition of good samaritan programmers everywhere, allow me to introduce Michael C. Bassett of Plymouth who has written in with a routine to enable A2000 owners with GVP hard drives to regain more than 180k of ram. This memory is normally taken by the system, no matter if booting from hard drive or floppy.

Assemble the code below and use it when booting to tell the system to ignore the hard drive and return your memory.

```
* Code to release ram taken
* the by GVP hard drive.
* Written by that nice
* chap Michael C. Bassett.

execbase equ 4
superstate equ -150
resetvec equ $fc00d2

move.l  execbase,a6
jsr     superstate(a6)
jsr     resetvec
```

I AM always on the lookout for clever solutions or techniques. Your Basic program to calculate pi to 30 decimal places might be just what someone is looking for. Or have you found a neat way in assembler or C to create software sprites with the blitter? Want to be famous? Send it in.

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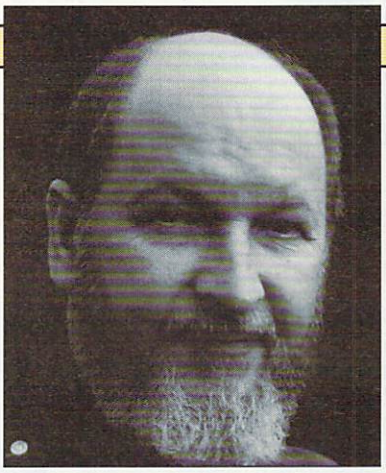
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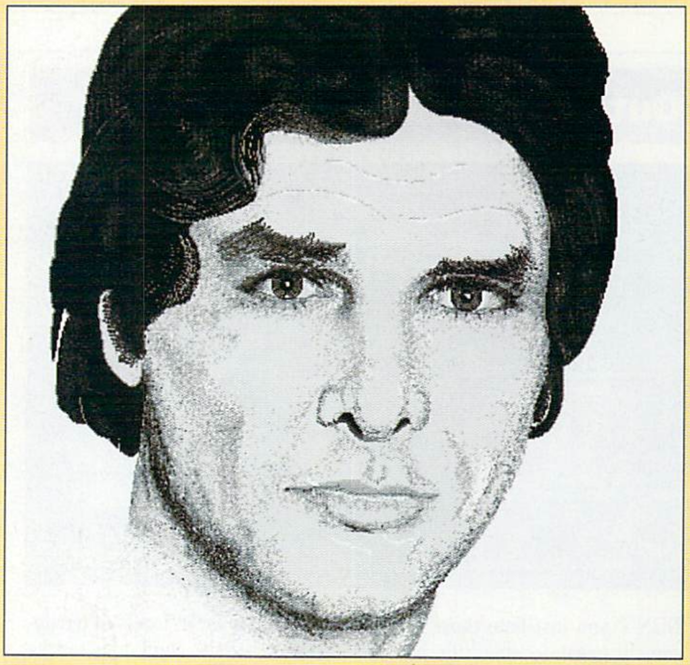


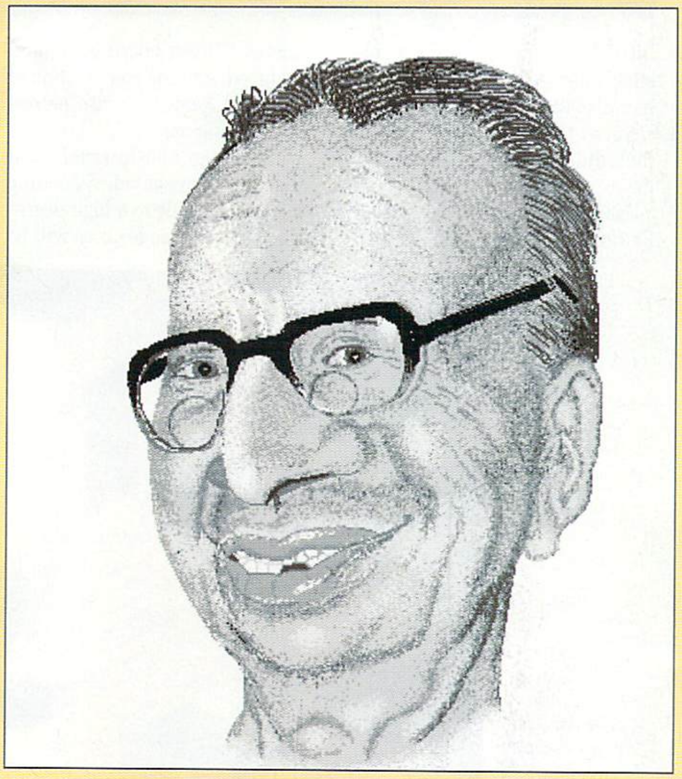
Portfolio



ERIC PICKERING made his debut on this earth at the same time as the outbreak of World War II, which makes him one of our older readers. Living in the heart of the Welsh hills, with the river Clwyd running through his back garden, Eric is a residential social worker responsible for the running of a home for the elderly, which means he regularly has to spend up to four days away from home.

After a stretch of duty Eric relaxes by getting out his Amiga and producing the stunning portraits you can see on this page. He used the original DPaint to draw these 16 colour, hi-res pictures, but has now upgraded to DPaint III.





COMPANIES or individuals wishing to commission any of our Portfolio artists should in the first instance contact the *Amiga Computing* editorial offices.
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Getting the drift

IMPRESSIONS is getting hot under the collar about Rorke's Drift. Those of you who remember the film Zulu will no doubt recall that 11 Victoria Crosses were won in that exchange, most of them posthumously.

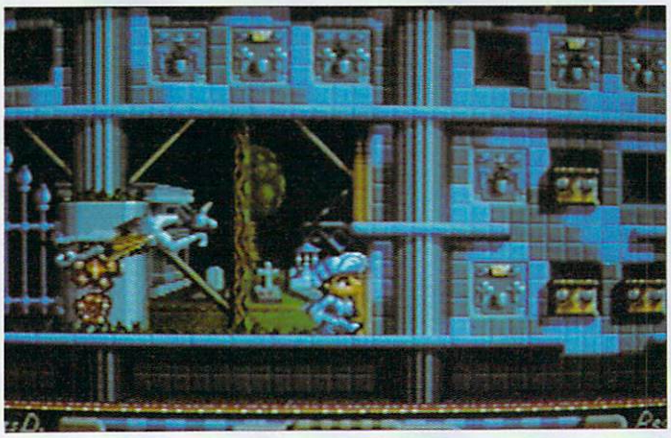
The battle of Rorke's Drift was probably the biggest foregone conclusion in British history. So how is Impressions going to turn it into a playable strategy game? Well, we reckon they might fiddle the numbers a bit.

The emphasis will be on accessibility. Although the strategy will be serious, the idea is that you don't have to be a strategy gamer to play it. Command will go right down to individual level, and each man will have his own strengths and weaknesses. Eighty animation frames for each soldier will ensure the graphics are up to scratch.

Why Impressions has taken a break from football games to release this battle sim is anyone's guess, but as you can see from the photo, the staff is taking it seriously. Or are they taking the pith?



Out on a flimb



DON'T you just hate those loathsomely sweet, lovable little heroes in those perversely *nice* games? You don't? What are you, some kind of sicko?

Well then, you'll love Flimbo's Quest, the soon to be released arcade adventure-cum-platform game for the mentally questionable.

Flimbo, the hero, must make his way across seven levels of terrifyingly aesthetic yuck and rescue his girlfriend from the archetypal mad prof.

System 3's Adrian Cale described the game to us as "seriously cute".

Sounds hateful doesn't it? Amiga versions will be gently nudging themselves on to the shelves in mid-May.

Himmel in mein boots!

DIGITAL Magic Software is a relatively new software house, but it has already made waves with several top quality products, including Trained Assassin and the excellent Drivin' Force.

Next up for release is Escape From Colditz, based on the famous Gibson board game and produced with the co-operation of Major Pat Reid, who also helped with the original.

More than 600 internal locations are represented, recreating the famous castle to a high degree of accuracy. Some features will be



Colditz – pure escapism from DMS

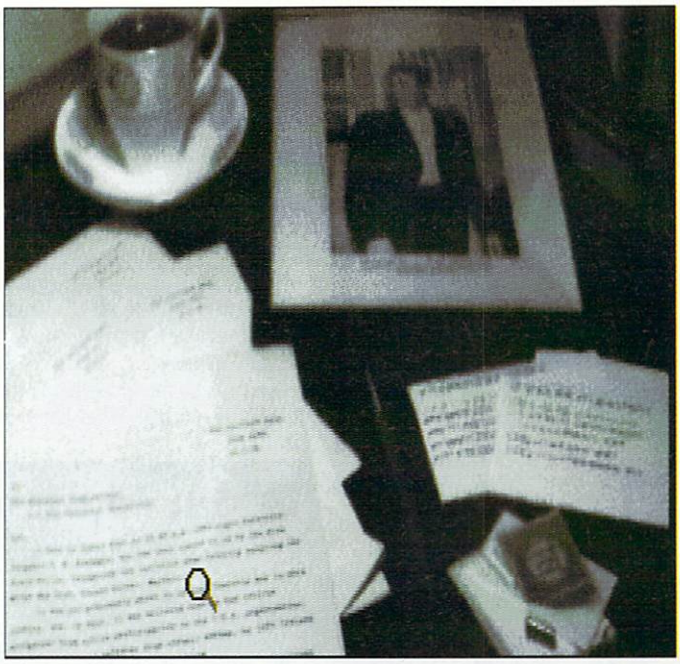
All the latest news on the games software scene

All hype?

CRL has been playing around with its new hypermedia production system called Dune. This enables even inexperienced programmers to knock together an interactive system in less time than it takes Jeff to make the tea.

The first piece of software off the production line was Herewith the Clues, an adventure based on the book by Dennis Wheatley.

It's certainly the best system of its kind we've seen so far. Stay tuned to *Amiga Computing* for more news.



ELECTROCOIN is better known for its expertise in the arcade, not in the home. It has been in the leisure business for more than 14 years, manufacturing boards and cabinets and distribution of imported products.

Now it is set to enter the home market. With all that experience behind the company, its first release, Time Soldier, is naturally enough an arcade conversion, but original products are not far behind.

Time Soldier is out now, price £24.99.

REVIEWED THIS MONTH

94% Might and Magic II
90% Infestation
88% Gin/Cribbage King
85% Dragon's Breath
82% 688 Attack Sub
82% Nuclear War
81% Knights of Crystallion
79% Fred
78% Kid Gloves
78% Pinball Magic
77% Crackdown
72% First Contact
70% Colony
67% Space Rogue
47% Paris-Dakar

completely new, like the ability to dig tunnels. (Danny? Are you there Danny?)

Escape From Colditz will be caught in the retailers searchlight real soon, so any Tom, Dick or Harry can buy it.



Softville winners

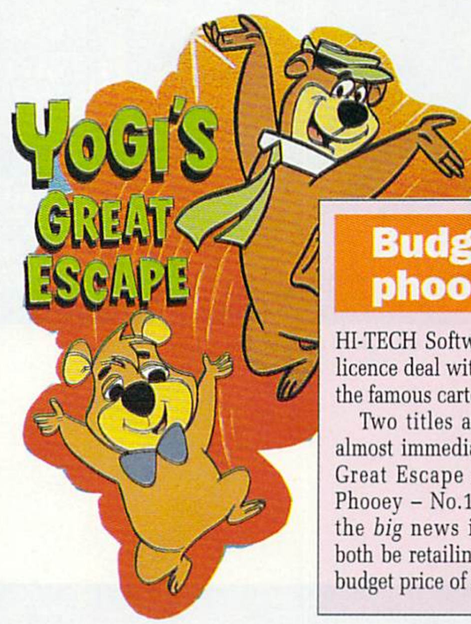
HERE at last are the winners to the wonderful Softville competition. We had so many entries that the magic bin liner split! Next competition you'll have to send your own. Anyway, the voluptuous Tym Lecky picked the following runners-up out of Green's monitor box:

Adam Picket from Sudbury, **Martin Fryatt** of York, **Richard Ballszewski** from Bedfordshire, **C.Ross** from Manchester, **S.Loveridge** of Surrey, **David Piper** of Newbury, **Theresa Bradshaw** of Kansas City USA, **Neil Winter** of Chelmsford, **M.Willerton** of South Humberside, **C.Bailey** from Bucks, **Robert Porter** from Blackpool, **G.Grimes** of Jarrow, **M.Holland** from Mingty, **Marcin Trzaskowski** from Poland, **A.Ruddle** of Seaford and **Darren Williams** from Birmingham.

Each of the above will receive five public domain discs.

Second prize of 50 PD discs goes to **SSgt D.J.McKay** of the Royal Engineers, and the fortuitous winner was **Andrew Hutchinson** from Hexham, who wins 200 PD discs.

You lucky, lucky people.



Budget phooey

HI-TECH Software has signed a licence deal with Hanna-Barbera, the famous cartoon studios.

Two titles are scheduled for almost immediate release, Yogi's Great Escape and Hong Kong Phooey – No.1 Super Guy. But the *big* news is that they will both be retailing for the pseudo-budget price of £5.99



MIGHT AND MAGIC II

Only the dead go free

DUNGEONS and dragons have a lot to answer for. Not only did they spawn the creation of the first rule-based role-playing game, but countless lost hours spent trying to promote a sorcerer to eighth level or arguing over which character was at the front when the six inch spikes fell from the ceiling.

The graduation on to computer software isn't necessarily an advantage. There was something about sitting cross-legged in someone's bedroom, listening to some Floyd and rolling the 20-sided dice on a copy of the player's guide that just can't be re-created on a computer.

OK, so the computer now controls the rules and whatnot, so there can be no disputes. But sometimes the disputes were valid. Sometimes they were in the best interests of keeping the game enjoyable and playable.

Probably the most famous of these computer attempts is Dungeon Master, now going into a second incarnation. The problem with DM is that the format is too rigid. The combat itself is random, based on formulae, but the intellectual involvement is static. You must explore the dungeon and there is only one way to do this.

I'll not deny that this approach is a good and entertaining one, but it is missing the point. It makes role-playing like a board game. And that is precisely what it's not about. Role-playing is about freedom – escapism in one of its purest forms.

Some games have gone the other way, with totally random events. Again, these have their advantages, but they can be just as terrible. If the game is so random what is the point of exploring? What happens 20 miles away is just as likely to happen here.

This is where Might and Magic II starts scoring points. It is obviously heavily based on the Gygax series of games. Character generation is almost identical, as are some of the spells and weapons.

Might II makes its stand by starting off as a random hack and slash and then turning into more of an adventure. A random slaying may eventually lead to a quest. For example, in the first city a wizard will ask you to fetch back a goblet stolen from him by the goblins



Just one of the tough customers you'll meet on your travels



Don't go digging for gold in the street – rob a few houses







which live under the city.

If you accomplish this task he will put you on to his sister, who also wants a job done. In this way quests can follow on from each other. You may find items from one quest while attempting to complete an entirely different task. There is a great sense of taking part in something real.

Unfortunately, the game is totally keyboard driven. This is actually a bit more sensible than using the mouse for moving around, but I think the spells at least would have benefited from a pull-down menu. It's very difficult to preserve the atmosphere of performing some occult ceremony while cross-referencing a table of numbers to the instruction book, no matter how much incense you burn.





Whenever the characters encounter anything, an animated graphic will appear. These are not only a nice decoration but can give you an idea of what you are facing.

If you can't guess whether a Brain-eater is undead or not, seeing a picture of one might help you decide. My favourites are the Jugglers, which actually juggle properly, and the Hungry Plants. Beware of the flowers....

Most adventuring will take place within the confines of, or underneath, one of the five cities of Cron. However, if you're feeling lucky, or if the quest you are on demands it, you may find yourself outside the protective walls of a city and exposed to constant danger.

A knowledge of woodcraft, mapping, mountaineering and other skills relevant to the terrain can be obtained if you know where to look.

In terms of longevity I would say there are well over 100 playing hours worth in Might II. The major quest, the battle to save Cron, is a far off and distant thing, though important. Like the ultimate question of life, the universe and everything.

It's not terribly Amiga-like, though it will run from AmigaDos and can be installed on a hard drive. The usual intuition-type touches are missing, and are missed greatly, at least at first. Soon compulsion takes over.

Might And Magic II captures the essence of role-playing that the others have left behind for the rule books. They haven't got that M&M feeling.

Lucinda Orr

Might and Magic II
£?24.95
US Gold

Aura	██████████
Graphics	█████████░
Gameplay	█████████░
Value	██████████

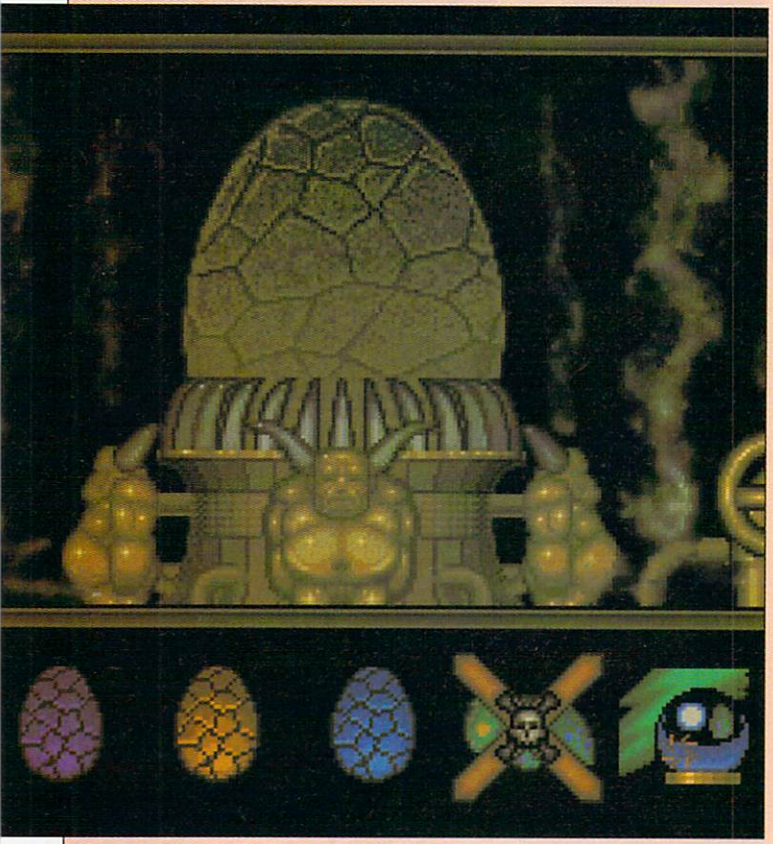
Overall – 94%





DRAGON'S BREATH

Puff



Do you want your eggs fried or boiled?

WHO wants to live for ever? Well, OK then, apart from Wogan. Far away in the land of Anrea, where presumably Queen has yet to play live, there are three people to whom the idea appeals not a slight bit.

In fact these people – though I use the term loosely – are quite prepared to subject the surrounding countryside to terrible war and devastation just to gain access to the talisman which will admit them to the Great Throne Room.

The cunning plans they have drawn up are all based around the latest in hi-tech aeronautics, the dragon. Each will start with one bog-standard flying reptile. By the use of its advanced weaponry they will be able to occupy, control and frighten to death local villages.

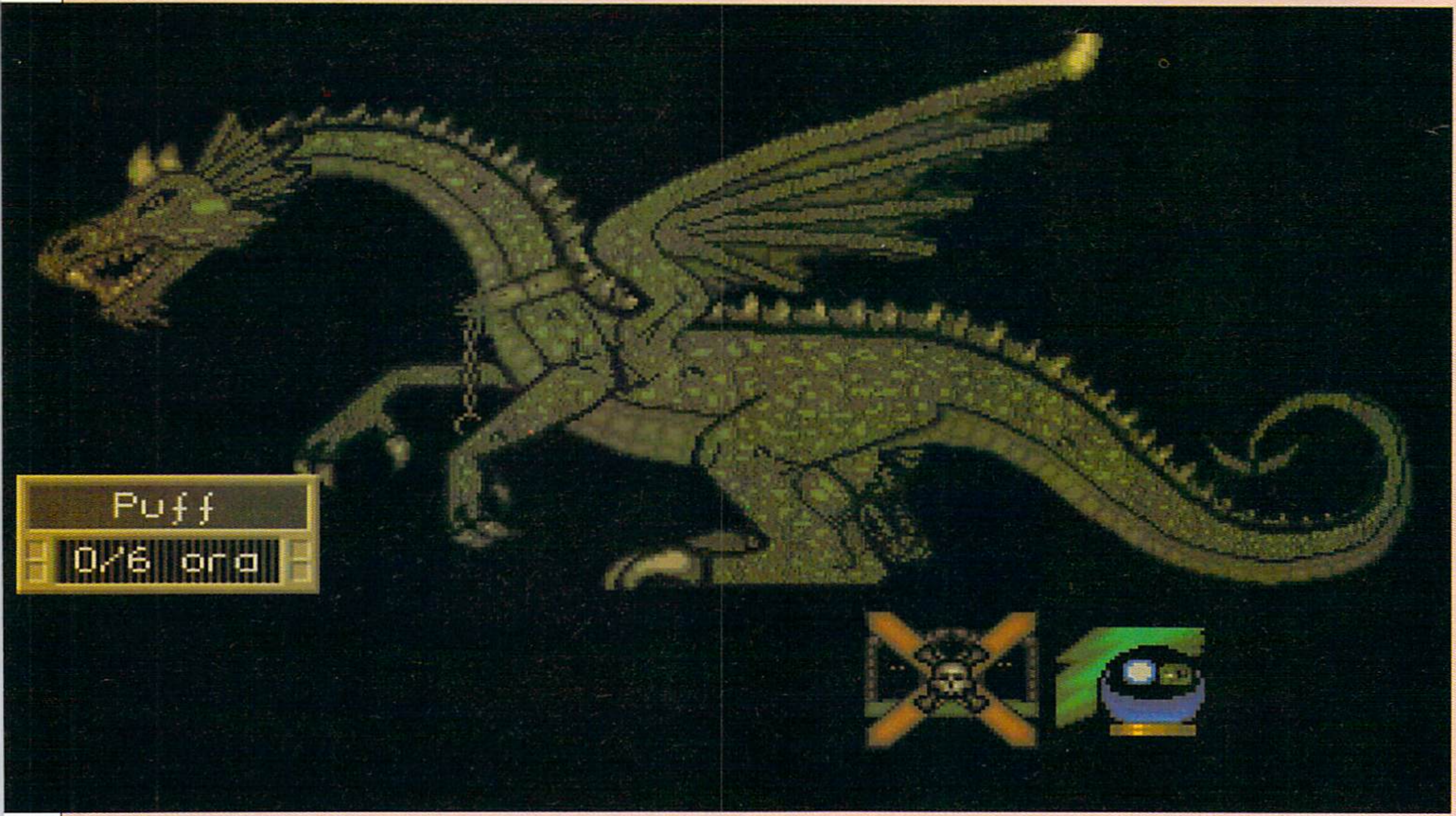
Taxes can be collected from villages in your character's control, the major source of income for a tyrant. Further supplements may come as presents donated by villages at war with ones just levelled by your flying beastie.

Each character has a backup supply of 20 unhatched eggs. You'd better bung one of these in the oven sharpish – you'll need it pretty soon. The dragon incubator can be set at one of eight levels of power. The time it takes for your little darling to come out of his shell is determined by how high you set the incubator, but so are the fuel bills.

This is really a management exercise. A careful eye must be kept on your cash supply, because if it runs out you won't be able to afford the terrible fuel bills which result from using the dragon incubators. Of course, you have to use the incubators because without them you can't hatch dragons, and without dragons it is impossible to win the game.

The main aim is to find the talismans. Only when you have all three guarded by your dragons can you move them and get into the great castle on Dwarf Mountain. So you need at least three dragons to win the game.

It is possible to play without using magic, but I doubt if you would be able to win. Your dragons wouldn't last long for a start –



These dragons are magic

a couple of decent bashes and they would be featuring at the top of the menu in some peasant village for a long time to come.

The magic in the game is a little reminiscent of A level chemistry. There are lots of strange bits of glass apparatus, a Bunsen burner and a rack of very dangerous looking substances in dodgey looking containers.

Consulting various complicated charts will tell you which substance to use and how to prepare it for a given effect. But be careful, make sure you check for possible side effects. It is all very well giving your dragon virtually infinite strength, but if the potion reduces his speed to that of a Cub90 you haven't done him any favours.

On the odd occasion you may find your potion is so good that it blows up. The graphics in this section are very good. It is quite easy to judge how well your spell is going by watching the yuck that drips into the beaker.

Spells can be used on villages for either friendly or hostile purposes. You might want to reduce the populace's combat ability, for example, or perhaps you would like to boost the population. All sorts of effects are possible if you research enough.

Excellent graphics and sound throughout make every stage of Dragon's Breath a pleasure. A wonderful strategy game, full of deep interaction between villages, dragons and players like a latter-day Balance of Power.

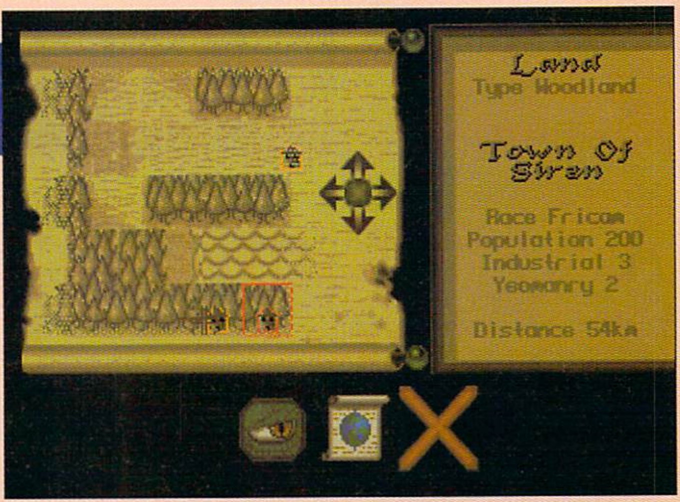
But there is more to it than that, as you'll find out when you see a dragon hatch and take its first breath.

Lucinda Orr

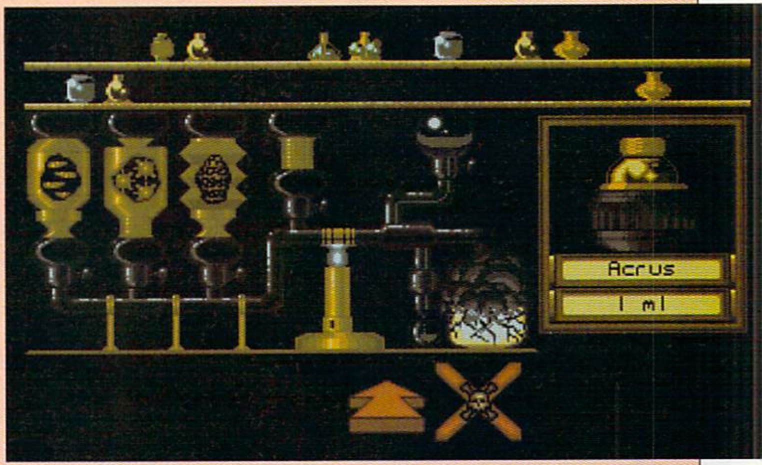
Dragon's Breath
£24.95
Palace

Sound
Graphics
Gameplay
Value

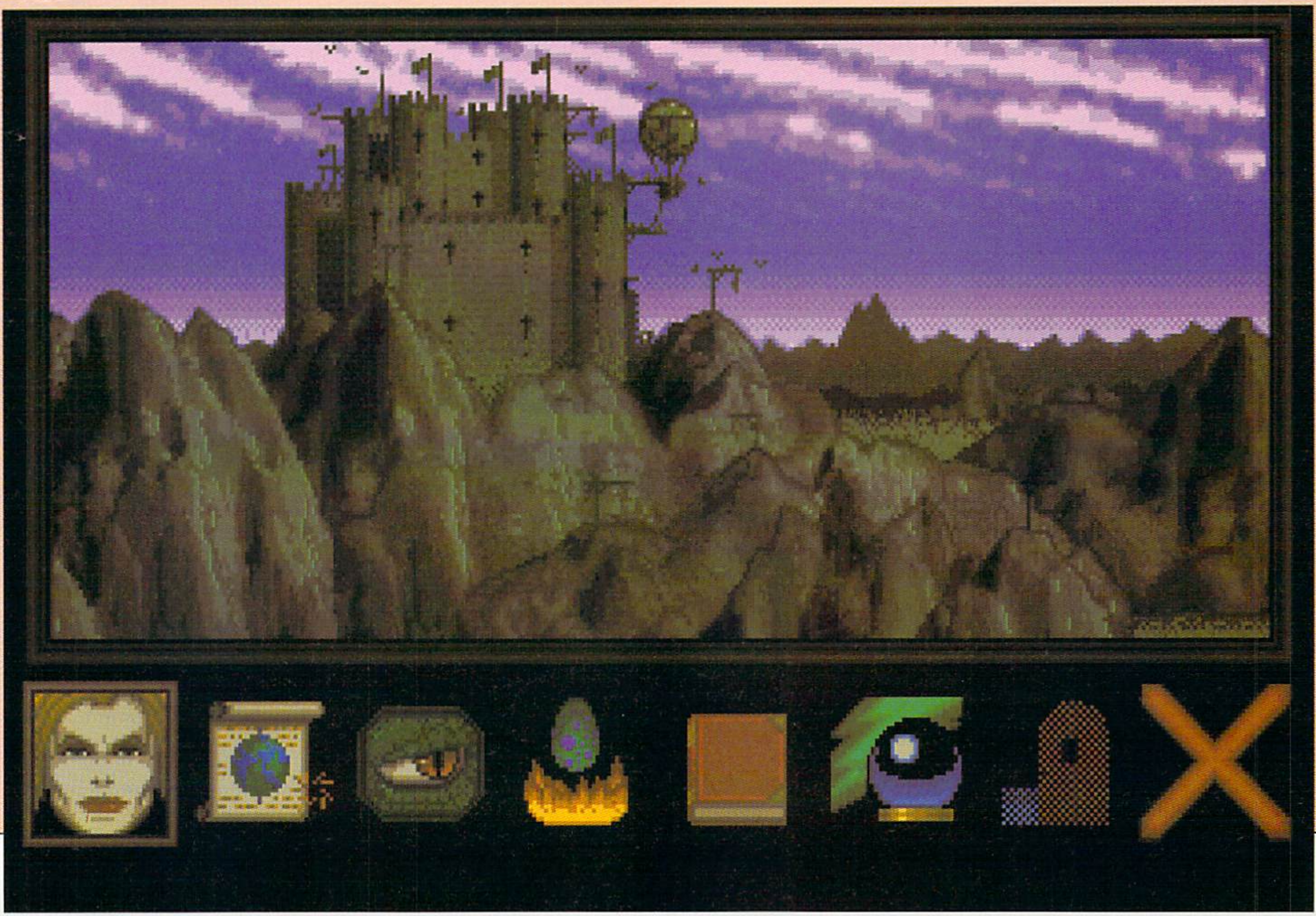
Overall – 85%



A detail map showing an unsuspecting village…



Too much chilli powder I think



FIRST CONTACT

We come in peace – shoot to kill

ALTHOUGH the outlying areas of the galaxy had been colonised, travel between the central regions and the suburbs was a lengthy process, sometimes taking up to 50 light years.

Thankfully the introduction of a new FTL (faster than light) communication system had largely cut the time it took the Post Office to send a first class letter from Fulchester, Earth to Uranus. It could now be done in just under an hour instead of two months. However, science still hasn't devised a way of making sure your mail doesn't get lost.

Still, everything was running smoothly. The government was just about to sell off a planet, which didn't belong to them, for major redevelopment, and the Channel Tunnel was nearing completion.

While everybody was wondering whether now would be a good time to sell off their water shares, few noticed the huge amount of ships that had appeared on the horizon of the galaxy.

Rather good timing on their part, as the Americans had just finished scrapping their weapons. Many were now in museums, others scrapped, the rest bought by rich Arabs for their kids' birthdays.

These spacecraft quickly spread themselves about the galaxy, watching, guarding every movement. No ship was allowed to enter or exit any planet, all attempts were met with death. Never was there any communique from the aliens. All efforts at establishing communications went without reply. A bit like BT.

While keeping watch, an alien vessel stumbled upon one of the remote relay stations of the FTL comms link. The aliens' moves suggested that they would board the station in the near future. Something had to be done before communications around the galaxy were cut off for good.

Assuming control of an undamaged maintenance droid upon the station, you must guide it, obliterating any alien life form that happens your way.

Control of the droid is via a remote link, while a birds-eye view of the station is provided by a number of sensors within its corridors.

The droid is made up of three independent sections, each having different capabilities. The three parts can be divided to provide three independent droids. Science programmers have made it possible for you to re-program each of the droids.

The station has four levels, each is equipped with machinery vital to the radio station's function. Deck A has many storage lockers which contain important components that will aid any repair.

Each section of the droid can be moved independently, but it's no use moving only one at a time. If you are to do this job properly you must get the droids working simultaneously.

For this you will need to spend a bit of time programming a single droid. This involves detailing a route for it to travel and repairing faulty equipment that has been damaged by the alien intruders.

Once the program is ready, run it and away it goes, performing the tasks you instructed it. If a programmed droid comes under attack it will not fight back and will eventually become disabled. Damaged droid sections can be picked up by others and taken back to be repaired.

First Contact is all about getting the upper hand, and keeping it. If you allow the aliens to get ahead, repositioning yourself as the leader in this long battle is going to be difficult.

One of the things which lets the game down is the fact that there is no scrolling, the screen simply flips when you reach the edge. However, the graphics are good and very detailed.

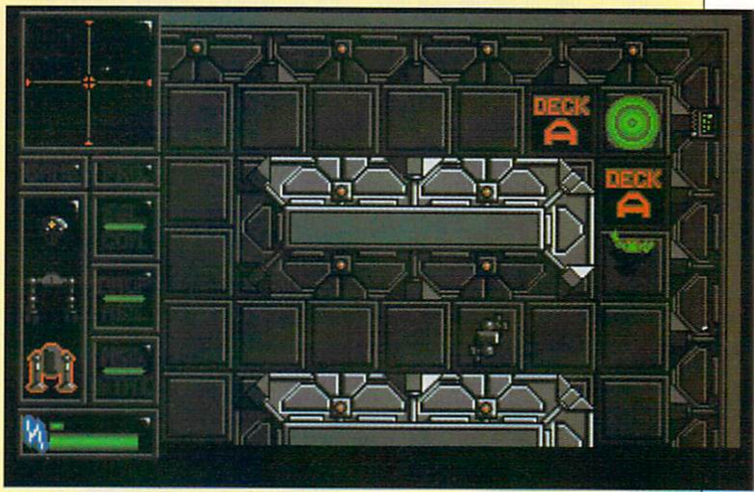
Movement is well handled, right down to aliens jumping over fallen droids. As arcade strategy games go, this has got to be one of the better ones this year, though that isn't saying much.

Andrew Banner

First Contact
£24.99
Rainbird

Sound	
Graphics	
Gameplay	
Value	

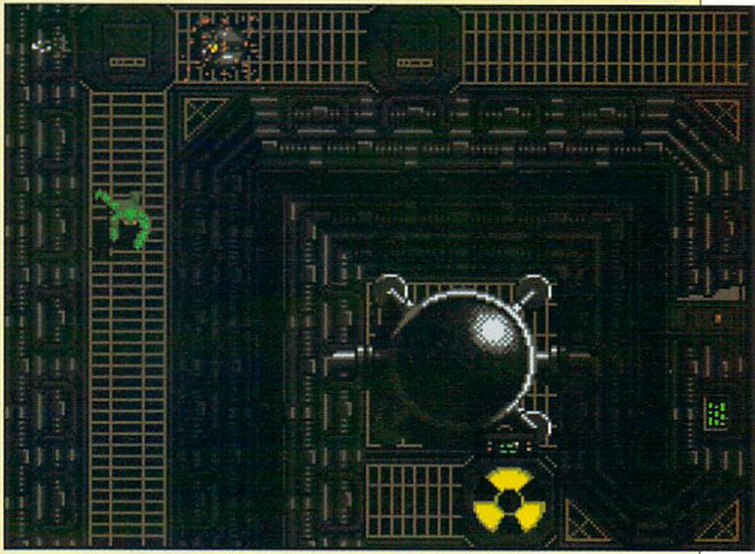
Overall – 72%



Deck A, where all the spare parts hang out



The programming language is slightly more advanced than Amiga Basic



Sigourney Weaver you're not – but you'd better waste that alien before he does some damage

FRED

Now with added depth

BEING a handsome, manly hero can be a bit of a drag sometimes, let me tell you. For Fred it was worse. Since he was such a hero, he inevitably fell in love with a beautiful girly. Since he was handsome, she inevitably fell in love with him. Since he was manly, he was inevitably despised by the local Dwarven King.

Now this king ordered his right-hand sorcerer to turn Fred into a bit of a weed, and an ugly one at that. Result? The girly, being fickle, as they tend to be, loves him no longer and the Dwarven king has a seven stone weakling gunning for him.

Rather than write to Charlie Atlas, Fred immediately sets out on his arcade adventure type quest to become handsome again. Armed only with his sword and a few throwing knives he takes on the Dwarven Empire.

Funny animations, adequate sound effects and weird strategy as you try to deal with the effects of



"depth" to the screen, the action taking place in up to four planes, one behind the other.

Certainly an interesting arcade adventure approached in an interesting way.

Green

Fred
£24.95
Ubi Soft

Sound
Graphics
Gameplay
Value

Overall – 79%

PINBALL MAGIC

From Soho down to Brighton...

WITH the kind of setup slightly reminiscent of TimeScanner, you must hit the right pegs, score the right bonuses and then shoot your little metal friend out a tunnel into the next levels.

There are 12 levels in Pinball Magic, each with a completely different layout, all of them interesting and clever.

As pinball sims go this is one of the better ones, though there is no multi-ball feature. No one has got the flipper action right yet either.

Although entertaining, a grey hardware-sprite will never take the place of the silver ball.

Green

Pinball Magic
£19.95
US Gold

Sound
Graphics
Gameplay
Value

Overall – 78%



Flipping heck!



688 ATTACK SUB

Priviet, Glavnokomanduyushchij

DEEP plots are usually few and far between in the gaming world. Unless it involves submarines, of course. The plot of 688 tends to concentrate on the latest in technical gadgetry rather than the humdrum mechanics of submarine piloting.

You have many different types of map display, ranging from a overhead view with several levels of zoom, to the latest in high- frequency contour mapping systems which will produce a wireframe version of the seabed around you.

The periscopic-view graphics have either been digitised or brilliantly drawn. They aren't animated, more sort of redrawn for each new shot. This takes a second or so, but whenever you surface among a convoy of destroyers and the helicopters start buzzing you, that one second delay is the only respite you'll get.

Images of the crew members are definitely digitised, and what a grumpy looking bunch they are. They didn't even cheer up when I gave them a week's leave in San Francisco.

The best way to make your sonar operator happy is to deploy a towed array of hydrophones to let him listen out for approaching craft. You can help him even more by selecting high or band pass filters and performing a frequency analysis of the incoming signal.

Once you have a fix and move within range, you can release your torpedoes or launch a couple of surface-to-surface missiles. For the sake of improved gameplay, the temptation to use nuclear weapons has been removed. There aren't any. Good show.

A slightly less moral problem facing all simulation designers is that of choosing a realistic time rate. A real torpedo might travel for upwards of 30 minutes, which would drag a game out for days. Conversely, a helicopter might fly overhead in a matter of seconds. This means that simply compressing time is not an option.

The best solution, according to the creators of 688, is to fiddle the figures. Any why not? The result is a fast-moving, exciting challenge that all simulists will enjoy.

The 10 missions can be played using either the American Los Angeles or Russian Alfa class of sub. For some reason the Russian subs are all slightly less well equipped and more grimey looking than the American ones.

At least the options are in pseudo-Russian, which just about makes up for it. A few years ago, getting to play a Red wouldn't even have been implemented.

If you have only been interested in flight simulators before, perhaps now is the time to try a different challenge – about 1500ft under water.

John Kennedy

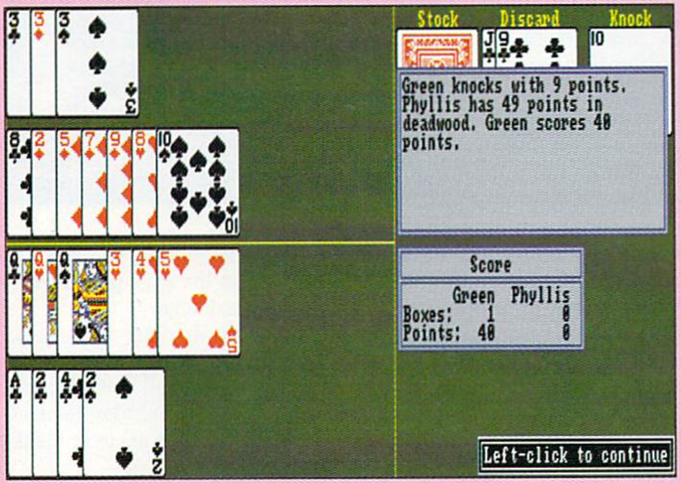
688 Sub Attack
£24.95
Electronic Arts

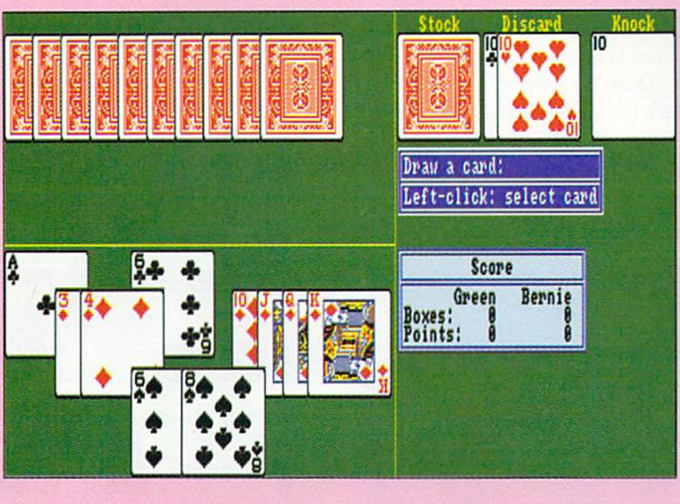
Sound
Graphics
Gameplay
Value

Overall – 82%

GIN KING – CRIBBAGE KING

Crown prince of cards





WHILE at university I always fancied myself as a bit of a Gin King. I would stay in my room all day sometimes, hunched over a table with a bottle of Gin. That was before I started writing for, hic, excuse me, for *Amiga Computing* of course.

Gin King and Cribbage King are similar in that not only do they use a deck of cards but you have a choice of playing against one of seven opponents, each of varying skills and tactics.

During play you can even get a hint out of one of these fictional players. In fact, all the help begins to resemble the sort of features you might find on one of the myriad chess programs about. I suppose this isn't really very surprising because the programs are written by those responsible for Chessmaster 2000 and the forthcoming 2100 version.

If you don't understand the rules of either of these games then this is the perfect opportunity to learn with the on-screen help and a list of the rules. There are seven players with varying skills and strategies to practice against, as well as to seek help from.

The graphics are excellently copied from an authentic pack of American playing cards. If you don't believe it, a pack of the originals is included. These are the first cards I've seen on-screen that actually look like cards – they are a little square, probably because, unfortunately, both Cribbage King and Gin King run in NTSC.

Both games are OS friendly and will multi-task, but if you're planning on running anything alongside them you'd better invest some dosh in chips of the ram variety.

A lot of thought has gone into these games, as you would expect from Software Toolworks. The accompanying manuals are very informative. In the case of the cribbage one the game is broken down into the relevant statistics that pro players know off by heart.

Quite reasonable money for a good and potentially inexhaustibly entertaining game. Much better than killing aliens.

Green

Gin King/Cribbage King
£29.99
Mindscape

Strategy
Graphics
Gameplay
Value

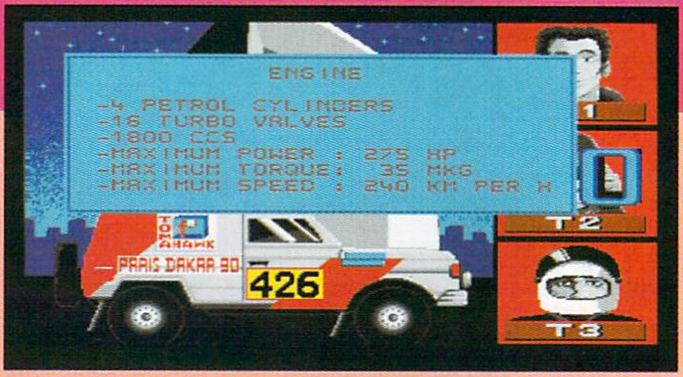
Overall – 87%



I could be on a winning run here

PARIS-DAKAR

Rocks, sand, sun and Frenchmen



EVERY once in a while a group of people decide to go from Paris to Dakar. Rather than doing the sensible thing and flying there, they use whatever kind of motor vehicle they can find – cars, motorbikes or trucks.

Much of the terrain is like a small Bed and Breakfast on a cold, wet Friday evening. Inhospitable. Much of it is desert. This is convenient because it means that game designers don't have to think about the colour of the landscape.

With the addition of a few hillocks, rocks, place markers, cattle skulls (dessicated) and ruined temples (desecrated), you have yourself a passable desert.

Alternatively you could add half a ton of custard and have a passable dessert. Although a dessert wouldn't have the obligatory strip of scrolling mountains two-thirds of the way up the screen.

At the very start you must endure a rather badly sampled tune, which is built from a very few, very long samples – and very muffled, to boot.

Next you must do a colour code routine, which has a nasty habit of crashing even when you get it right, and then it's on to the game itself.

You must choose whether you want to drive a plain 4x4, a modified 4x4, or a prototype 4x4. They all look identical, so you can't go for the snazziest.

The curious thing is, even though the basic machine uses diesel and the prototype uses high octane, they're all filled from the same pump, by the same mildly disreputable looking garagiste.

What's worse, all the engines make the same noise, so next time your 16-valve sounds like a taxi, you'll know not to worry.

And now to the game – I call it that, for it is customary to do so. What you have to do is follow two sparse lines of place markers along a curving and undulating route of uniform light sandy-brownness.

The navigator has a map that it may be an idea to follow, showing roughly where you should be heading, and exactly where you are heading. These, more often than not, do not match up, so it's all down to following the markers.

There are some rather bad ideas to follow, showing animated interludes between stages, and it would be better not to dwell on these, for they are, in the most part, a complete waste of time.

There are also inter-stage stages, where you have a map, but it doesn't actually tell you where to go. Pretty useful, huh? Just think of the fortunes to be made in blank maps...

And that's the game. There is a competition to be won if you do very, very well. But I suppose if you can bring yourself to do very, very well in Paris-Dakar, you deserve all the praise you can get.

But I'm just an average mortal,



Extending the international hand of friendship in the shape of a 40 megaton missile

BACK in the Fifties there was a film called Fail Safe. It starred Henry Fonda and dealt with the possibility of an accidental nuclear war initiated by human error and carried out by machines. This is not that story.

Around the same period there was a film called Dr Strangelove (the animated title sequence even copies a bit of the film) which dealt with an almost identical set of circumstances but starred Peter Sellers, and so was a bit funnier. This is almost that story.

Your country needs YOU. Being the leader of a little island paradise, the populace have entrusted you with their safety. Guard your five major conurbations jealously, for other leaders are out to steal your people.

Four other countries are represented in the game, each with a despotic dictator who would rather initiate armageddon than lock up his grandmother. And we all know how much they enjoy doing that.

These four leaders can be chosen from any of 10, including Ghanji, Colonel Kadaffy, Infidel Castro and P.M.Satcher.

Any similarity with persons living or dead is, of course, entirely coincidental.

Your adversaries, as do all world leaders, fall into one of five general categories: Pacifists, madmen, liars, warmongers and standard, whatever that might entail.

If you know the type of leader you are facing you have a better chance of predicting his next move. Thinking ahead is jolly important in this game.

Develop your own independent nuclear deterrent to "help keep the peace" – I mean, you'd never actually use it, would you? Nuclear warheads may be delivered by missiles or by bombers such as the NP-1 (Nuclear Postman).

Gear up your peoples to manufacture the weapons of destruction. There's nothing wrong with being prepared for war, is there? It's not that you were planning to initiate it, after all. Try putting that one past Ayatollah Kookamamie.

As well as the standard destruction by enemy action, a few random accidents may befall your cities.

Earthquakes, nuclear accidents, falling 16 ton weights (nobody knows where they come from) and Cattletech – a vicious form of com-

with an average ennui threshold, and I couldn't handle it.

In motorsport you'd expect a certain amount of crashing to go on. But not the kind that quite often happens with Paris-Dakar – you know, the sort that involves flashing red boxes and Guru Meditation numbers. Sigh.

Stewart C. Russell

Paris-Dakar
£19.95
Tomahawk
Sound
Graphics
Gameplay
Value
Overall – 47%



The steering wheel is on the wrong side

NUCLEAR WAR

Try a little tenderness

bat where a herd of cattle is catapulted into enemy territory before stampeding through the downtown bars and hamburger stands.

UFOs do exist and they are watching you at this moment. They find earthman antics very amusing and would do anything to perpetuate it. Like cloning cities for example. Watch the skies.

The graphical representation of Gravedigger missiles homing in for a groundburst is lovely. Many is the afternoon I could sit back and watch the last battle unfold on my monitor. Sound effects are amusing if not state of the art. Maybe that's why Truman sent up the Enola Gaye.

There is a lot of strategy involved to make sure the rusty wire that holds the cork that keeps the anger in stays in place. Some leaders are very volatile indeed.

It's not only great fun if you're into major devastation and things like that, but there is a good bit of thinking to be done.

When someone wants to launch a missile, for example, it takes two turns. At the end of the first turn the missile is on the pad. Now, who is it pointed at? Should you deploy a defence system? How well you can interpret the actions of your fellow despots determines your own, and the world's, survival.

Lucinda Orr

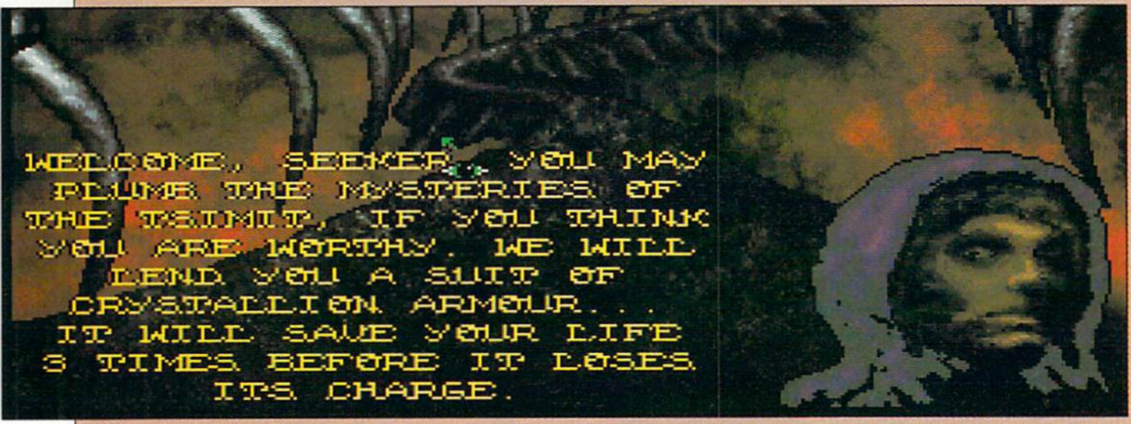
Nuclear War
£19.95
US Gold
Strategy
Graphics
Gameplay
Value
Overall – 82%



Nuclear devastation at your fingertips. More hardware than Texas Homecare

KNIGHTS OF THE CRYSTALLION

No bones about it



Knights of the Crystallion
£24.95
US Gold

Aura
Graphics
Gameplay
Value

Overall – 80%

BORDERING on the games mainstream, many new genres are born – and die just as quickly. To survive on the fringes of popular alien-blasting, a game has to be something special – different and worthwhile.

Knights of the Crystallion is an attempt to prove that there can be more to computer entertainment than laser death squads, alien invasions and end of level monsters.

Imagine a whole ecosystem evolving on the skeleton of a long dead sea creature, the Orodrid. Imagine the culture which would spring up on such an environment, where groups of families live on different ribs of the gargantuan carcass, each self-sufficient in terms of produce.

Imagine the local shaymen, controlling all the intellectual and spiritual concerns of this enclave, this protosystem for biocultural development.

You can stop imagining now – play Knights of the Crystallion.

The aim is, not surprisingly, to become a Knight of the Crystallion. A Crystallion is a clear crystal horse, born from the fossilised brain cells of the immense Orodrid.

The Crystallion is no beast of burden but a creature of strength, intelligence and beauty. Only the wise and the accomplished can have one as a companion. The friendship of such a beast is a high honour.

The enlightenment which leads to this goal is both on the mental and physical planes. You must form a spiritual bond with the Crystallion long before you meet it. Play Deketa, a kind of Pelmanism, to sharpen your telepathic powers, and Bosu, a game which requires you to make the most of small resources.

Travel through the Veils of Tsimit to retrieve crystals from the skull of the Orodrid, before finally making your way to the inner sanctum and the Crystallion egg, from which your Crystallion will be born.

All this must not be at the cost of your ordinary existence however. As head of a family in one of the Orodrid cooperatives, or Hareshs, you have a great financial responsibility. Trade must be investigated and planned and the needs of your family well looked after.

Knights is completely mouse driven, from the menu selections to the movement of your character through the twisty mazes of the Tsimit. There is no formal structure to the game, play takes place in any of the parts you specify, so you can concentrate on different areas if you wish.

If I was to describe the graphics as atmospheric I would be doing the game a great dis-service. They are truly works of art. The opening sequences and some of the later frames have the tell-tale signs of being ray traced, and well ray traced at that.

Financial strategy, arcade acumen and severe powers in the old grey matter department are needed to make a success of yourself in this fantasy world. There is quite a lot of thinking to this bit.

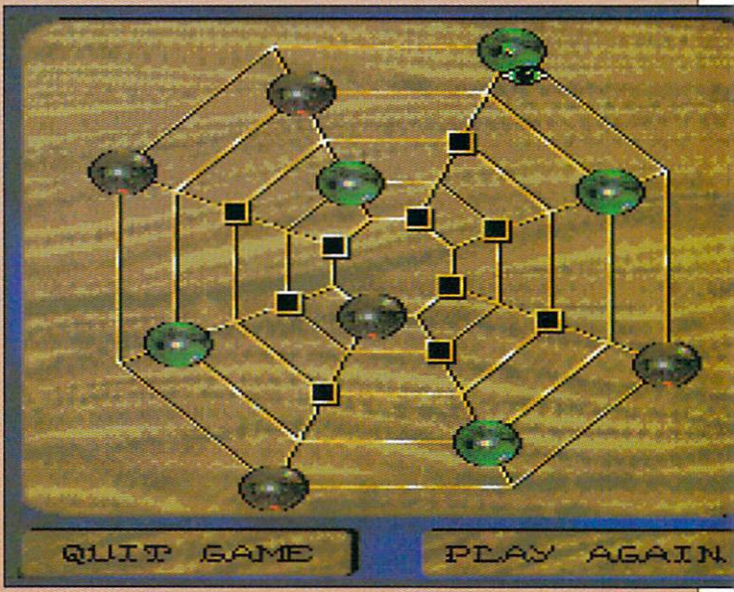
Making your way through the veils of the Tsimit is the only disappointing part. The maze and the shadow effects are good, but the hostile inhabitants are poorly animated.

Knights of the Crystallion represents a complete cultural simulation. Do yourself and your Amy a favour and buy this instead of the next "hottest" shoot-'em up.

Colin Turner



The main menu. Click on one of the options if you can catch it



A game to test your cunning. If you don't win you'll never see the Crystallion



WIPE-OUT
- the story so far
• The World's first Intergalactic Hoverboard Challenge.
• Fast, addictive 3-D action.
• Single or multiple player - play against fiendishly clever computer opponents, or just a friend!
• Over 1,100 stars - each with its own local league, and prizes.
• More than 77,340 possible opponents - each with its own individual characteristics.
• Form your own Interplanetary League
• Great rocking music - neck breaking speed!
• Can you survive the Death or Glory chicken-run challenge? Can you handle the Futon Flip?
• Qualify for the once-in-a-millenium All Time Greats Tournament.
• Have you slimed an Ameboid today?
There really is no feeling quite like turbo-boosting past your hapless opponent, hanging a wickedly fast 180 degree turn and sliming across his path before he's realised what's happening. Be warned - WIPE OUT may be the only game you'll want to play for some time.
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CRACKDOWN

Before you break up



Who's going to win today's game of Countdown



Teamwork – Ben hides in the car park whilst Andy plants a bomb

MAD scientists, threats to overthrow the world. Bah! Sounds a bit boring. No, hang on a minute... What's this? He has created an army of biogenetically engineered humanoids blah blah crush all opposition blah blah two special agents blah blah must penetrate his fortress blah blah destroy each section with detonation devices...

Excellent! A murder mayhem explosive unnecessary violence situation. My favourite.

Why don't these scenario writers just come right out with it at the beginning?

The situation is this: You, and a friend if you have one, run around a sort of maze killing people and planting bombs on the large red crosses someone has very generously painted on the ground for you. Then you run away very quickly before everything blows up. This continues until the mad professor has run out of things for you to blow up, so you have to blow him up instead.

Before you start laying the violence guilt trip on me here, remember these are bio-engineered monstrosities, not humans. OK, so they look a bit like humans and they sort of do humanish things, but they're not, so that makes it OK. Doesn't it?

What do you mean, "No"? Well, if you're going to be like that I shall have to ask you to leave this review. No, you too.

Armed only with your bare fists, a light machine-gun and a sub-mesonic nuclear auto-cannon you must combat the foes of humanity as you traverse level after mazey level of baddie hideouts, shortly before they blow up. You are a mean avenger and an angry one at that. Mind you, wouldn't anyone be if Mr and Mrs Breaker (yup, s'right) had named them Ben.

A radar scanner at the top of the screen will let you know where you are, where the crosses are, where any ammo to be picked up is and loads of other useful information which I have temporarily forgotten.

The really excellent thing about this boisterously addictive game is the way combat takes place. It isn't just the odd exchange of laser death, may the person with the fastest trigger finger win – a bit of stealth is involved, too.

You can crawl along flat against walls, sneak up behind people and biff them before they know what's happening. All potential adversaries show some signs of intelligence. Well, they're not too hot at getting out of the way when you blast them, but they know an infiltrating scumsucker when they see one and will waste little time in trying to establish contact with you, usually via a flamethrower.

Two-player mode is good. When you are cooperating not only do you have double the firepower but you can also do the old decoy dodge.

Picture, if you will, a packing crate, which has a baddie behind it. From one side nimbly dances Player One and with some footwork that could out-Fred any budding Astaire he dodges the odd bullet.

Meanwhile Player Two appears on the scene from somewhere stage left, that is to say behind the baddie. A burst of sporadic fire later and the world is a safer place.

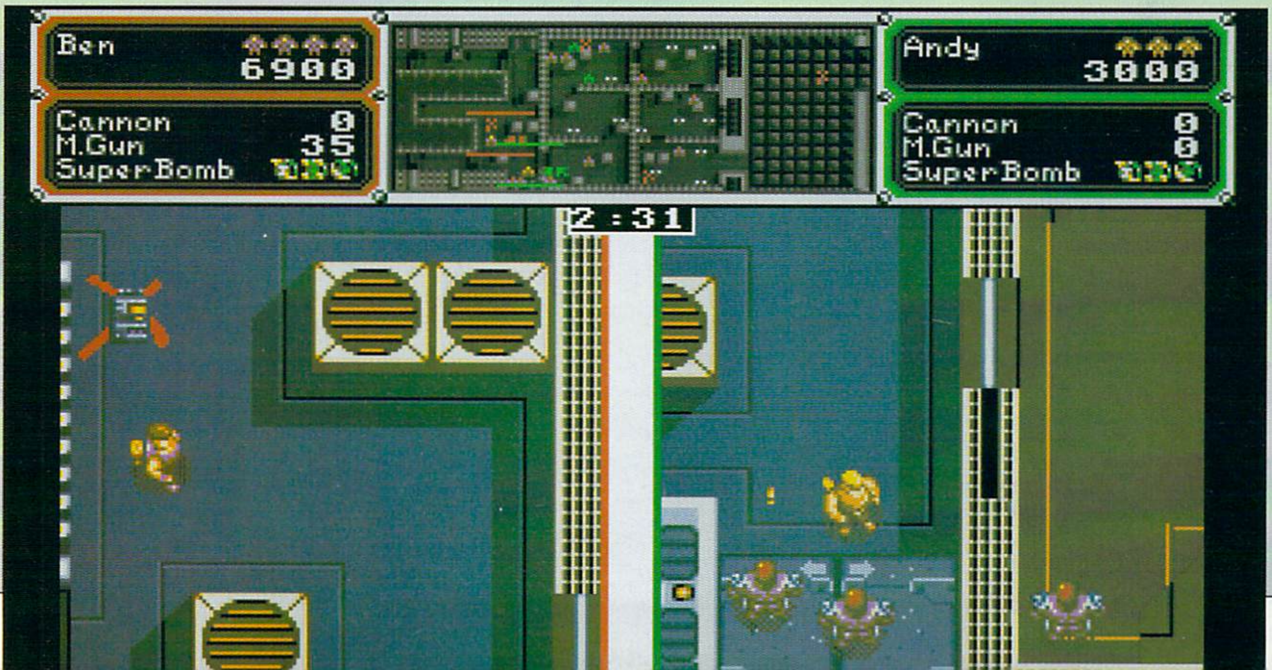
It's the same old story really in terms of sound and graphics, but the excellent gameplay elevates it that little bit above the crowd.

Green

Crackdown
£19.95
US Gold

Sound
Graphics
Gameplay
Value

Overall – 77%



INFESTATION

Bug off!



IN space, they say, nobody can hear you go to the toilet. This is probably something to do with all those nasty in-suit devices. Whatever the reason, it's a good job. Something big is going down.

An alien horde has laid eggs all over the Alpha II moon research station. Unfortunately it is not merely a job of flying in on a giant can of Raid and doing a bit of ozone-destroying eradication.

These suckers have hidden themselves around the complex, killing the occupants and are now generally hanging out and threatening to hatch.

Only one man is in a position to stop them from devastating all of humankind. Now who could that be, I wonder? As agent Kal Solar it is up to you to save the universe. Oh well, it's a dirty job but...

Flying in on your jet-pack you will have an awful experience of déjà-vu. Haven't we been through this all before? Oh, I remember, how silly of me – it was that time when I saved the universe before, something to do with the dark side of somewhere.

From here on be sure to keep the instructions close at hand. One false function key and you may depressurise your suit. Check your spigot!

The moon surface is crawling with all sorts of nasty things. First of all there's the indigenous life-form, a sort of giant ant whose silly expression is only matched by its poisonous venom. Secondly there are the patrol droids. Oh, didn't I tell you that most of the computerised systems were under alien control? Well, it's too late to go back now.

Gain access to the base and you can breath a little easier, mainly because most places indoors have a nitrogen-oxygen atmosphere. Now you can take off the helmet and conserve your oxygen supply.

Not only does this give you a wider field of vision but it also tones down those breathing sound effects, which are actually jolly good.

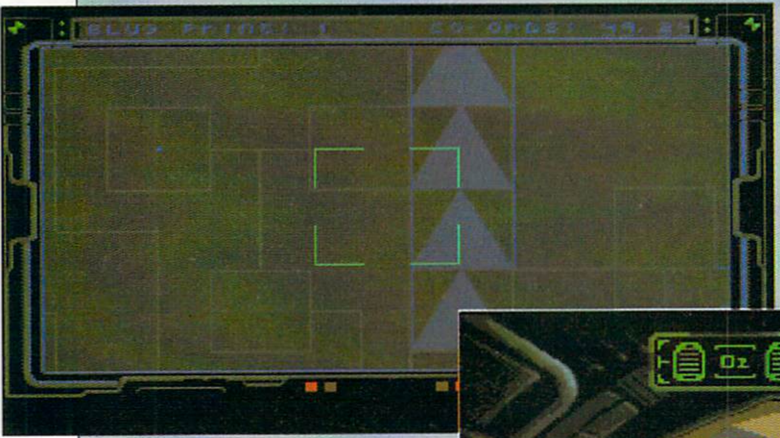
Make your way through the warren of passageways that make up the base. The HUD inside your helmet will give you lots of useful information. Well, maybe not. But it looks nice. So does the detail inside the helmet.

Filled polygon graphics with only a few teensy-weensy buglets here and there create the atmosphere inside the base. Refresh speeds are the fastest I've seen in this type of complex landscape.

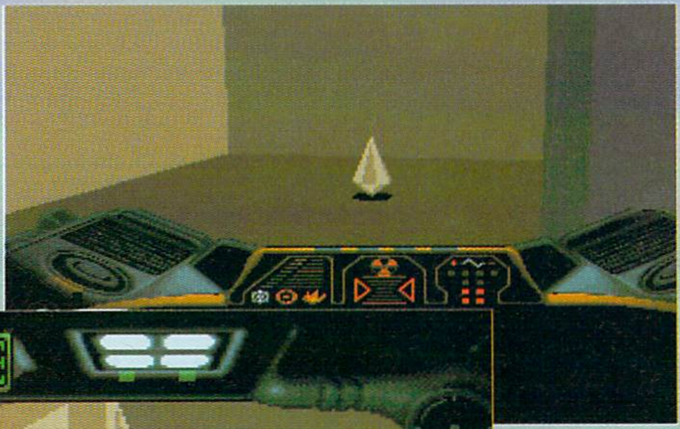
Search out the eggs and then give them a dose of cyanide (remember to close your visor first though). The place is not heavily defended by aliens, you are more likely to meet an accident, but remember – recent statistics show that most accidents happen in the moonbase.

Apart from asphyxiation and radiation leaks you could easily freeze to death, starve or even shut yourself in a door.

There is a maze of ventilator shafts to explore. They don't seem to do much ventilating. The plans look like they might have been drawn up



Computer blueprints detail the exact location of eggs throughout the base









Just inside the base and your first sight of an alien

Infestation £24.95 Psygnosis	
Sound	
Graphics	
Gameplay	
Value	
Overall – 90%	

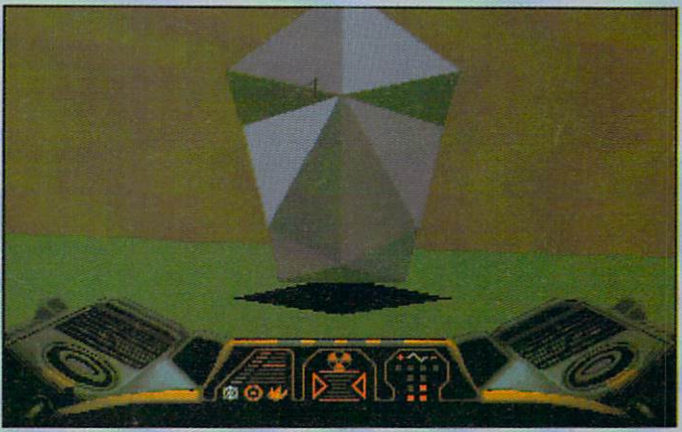


by the same bloke that did the gardening at Hampton Court.

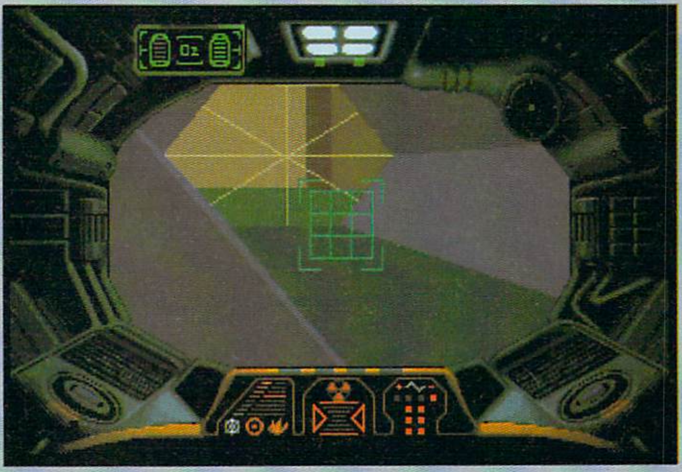
If you find the relevant key a lift will take you up and down the complex. In this game it is important to ignore Mungo's advice. If you hang around to make sure that the lift door is closed you may be there for longer than you expected.

A game that demands bravery, courage, cunning, dedication and a fanatical hatred of egg-shaped polygons. Off you go now and remember, the universe is counting on you. Check your spigot!

Green







SPACE ROGUE

Best of all worlds?

MEANWHILE, in a galaxy far away, the story continues. You are an honest space faring merchant-marine, taking part in an ordinary trading voyage in the Karonus star system.

Suddenly you come across an abandoned ship, apparently unharmed, apparently lifeless. You take an EVA and float across to have a look.

But disaster strikes! Just as you board, 10 fighter craft of the evil Manchi insect race appear out of hyperspace. Before your very eyes, your vessel is mercilessly vapourised with all hands.

Then as quickly as they appeared, the fighters vanish, leaving you alone in a cruel universe with a strange ship and no idea of what to do next.

So you rummage around in the glove compartment and look for the Owner's Guide. This explains exactly how you can go about flying your new command, The Jolly Roger, with either keyboard, joystick or mouse.

The previous owner – whoever or whatever it was – was a mucky devil and has left fingerprints, coffee mug rings and even little notes in the margins.

He, she or it has also left a colourful poster sized star chart, a short novella and two cardboard cut-out model spaceships. Nice touch.

By reading the guide and playing with the controls you can eventually reach the nearest space station. After docking, the display switches from the simple three dimensional solid view to a two dimensional overhead one.

You wander around the station, bumping into people and generally trying to find out as much information as you can. Amusement presents itself in the form of the latest arcade sensation to sweep the galaxy.

Playing a game within a game is not a new idea by a long way, but it's fun. Makes a welcome break. Plus, Hive will award a prize if you make it past the last screen, so it can't be bad.

Non-gamers may be better off visiting the bar for a quickie. If you knock back one too many you may find manœuvring between the walls a bit on the tricky side. It seems strangely familiar...

Once you have found out as much as you can, or have been evicted for trying to do something you shouldn't, you can leave the station and enter one of hyperspace gates with the inevitable "flying through coloured circles" stage. Then you start exploring all over again.

The overall aim is to discover why the Manchi destroyed your original vessel and perhaps save the universe in the process. And why not?

From the packaging and advertising blurb surrounding Space Rogue, I was unsure what sort of game it would eventually turn out to be. The end result is a 3D shoot-'em-up, 2D role-playing, strategic arcade game.

A bit like the last budget; not very taxing. Well, a good deal more enjoyable.

John Kennedy

Space Rogue
£24.95
Origin

Sound
Graphics
Gameplay
Value

Overall – 67%





Plot a course to the nearest space station, then dock by crashing into it. Simple, eh?



Hive! The greatest game to sweep the cosmos

ALL FOR ST OR AMIGA



GOLDRUNNER
Our top selling shoot em up from Steve Bak and Pete Lyon.



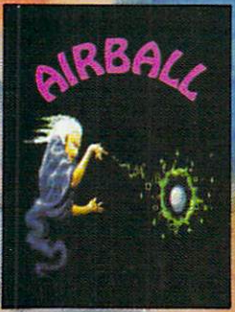
ELECTRONIC POOL
Mono or colour version of 'Video Pool' arcade game.



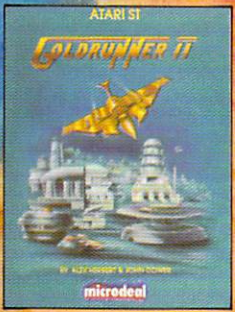
JUPITER PROBE
Vertically scrolling shoot em up by Steve Bak.



KARATE KID PART 2
Our top selling karate game.



AIRBALL
Over 200 rooms of strategic arcade action, graphics from Pete Lyon!



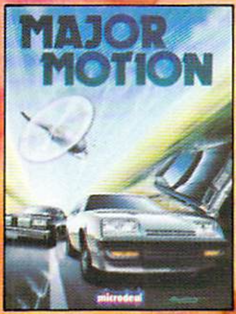
GOLDRUNNER 2
Sequel to our top selling shoot em up, high speed action packed arcade game.



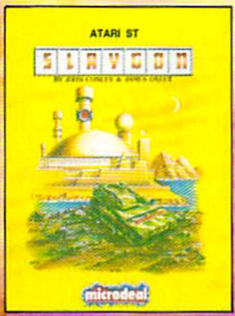
LEATHERNECK
Reviewed as the best arcade war game, program by Steve Bak.



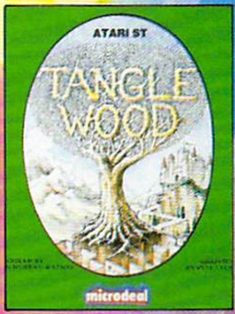
TETRA QUEST
Over 300 screens of arcade strategy.



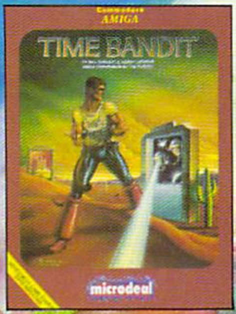
MAJOR MOTION
Spy car chase arcade game.



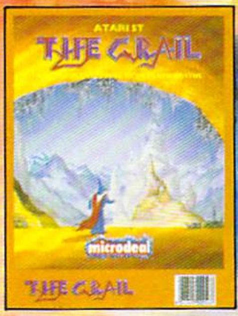
SLAYGON ADVENTURE
Stop Cyber Dynamics ruling the world in this graphic adventure.



TANGLEWOOD ADVENTURE
Rated as one of the best 16 bit graphic adventures.



TIME BANDIT
Top selling arcade adventure, the original ST Mega game.



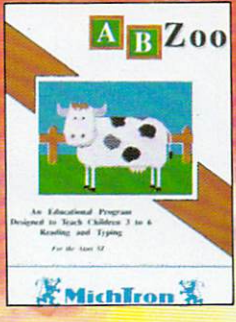
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TANGLEWOOD ADVENTURE	☐
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COLONY

It came from John Hurt's stomach



He's hard, he's cool, he's Space Marshall AJ

IT'S a funny thing, but you can usually tell a program's country of origin after playing with it for about 20 seconds. Take French games, for example; nine times out of ten they have seriously weird graphics, Jean Michel Jarre-type music and a severe lack of gameplay.

German games have animated copper lists and more scrolling messages than Jolyon Ralph, whereas British games – if they're not just a coin-op conversion – concentrate primarily on functional graphics and horrid Top-of-the-Pops music. Then there are American games...

Americans have a great attitude to copy protection. They don't like it much. One of the reasons is that quite a few Stateside Amiga owners have hard drives, and will want to install the game to speed things up and get rid of all that tedious disc swapping. They demand that games are easy to use and techie friendly.

Like Colony, for instance, which comes on two floppies, needs one megabyte of ram and will work in harmony with an A590. It also goes OTT in the way that interlace mode and colours can be decided before play. More like running an art package than a game.

However, a game it claims to be. And it comes with a plot that is mind staggering in its originality. It hasn't any. A colony far, far away on the very frontier of space has been overrun. All communications have ceased.

Guess what? Yup, you're the only Space Marshal nearby and you'll have to go and rescue everyone. If that doesn't sound like Aliens then I'm a mutating slime monster.

The author states he first had the idea for the game in 1983, and it looks as though this is when it was written. Graphics are solid, 3D and dull. Detail is limited, meaning they move quite quickly, but the refresh rate can be increased still further by switching to vector graphics only. Very Battlezone.

Whenever you approach an object such as a control panel or computer screen, the display changes to a 2D monochrome display. Yuck!

The graphics seem to have been ported from a mono Mac and are grim. Objects can be moved around, desk drawers opened and vital clues uncovered. Aha – right at the back of this drawer I do believe we have the Reactor startup code.

Death comes quickly in Colony. Make one mistake, press the wrong button, and you're dead. Instantly. No questions asked, no reasons given. Just a quick scream, a flash of colours and the Game Over requester appears.

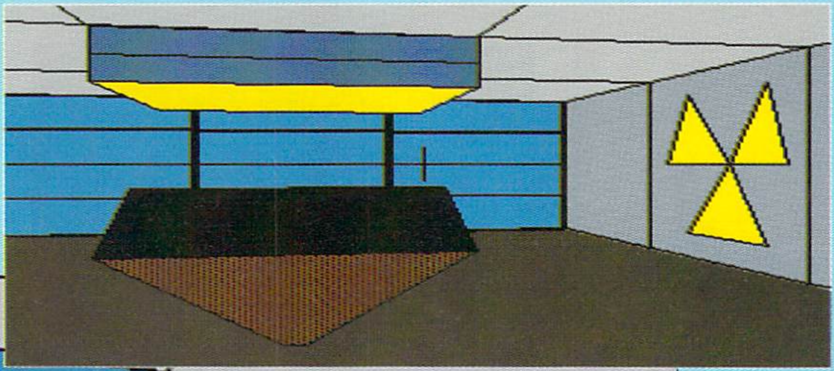
Some sort of reason for your demise is needed because constant, unexplained destruction tends to get on your wick after a while. To be honest it gets on your wick from the very start.

Sound effects are limited. The title music consists of a two second passage sampled from Holst's Planet Suite. Mars, I believe. Obviously no expense spent in the sonics department. There are occasional little jokes, such as the sound produced when you bump into the toilet, but nothing to lift it up to average.

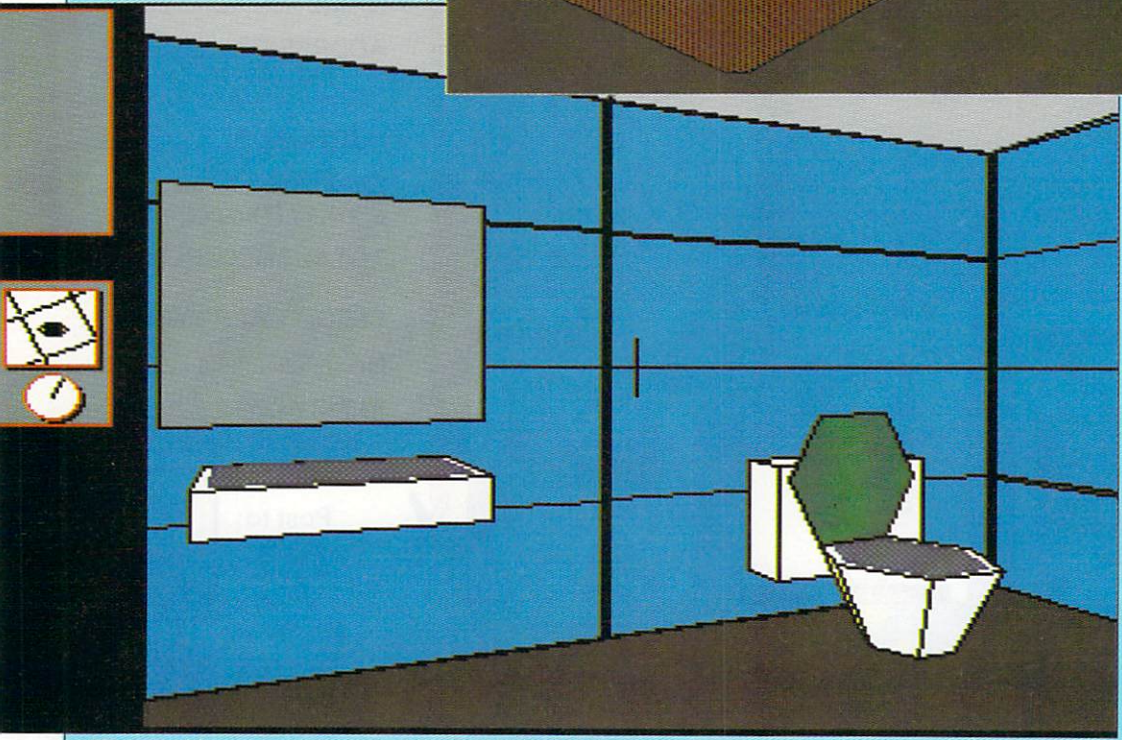
Colony looks severely out of date. Back in the 8 bit days it might have been acceptable, state-of-the-art even. Today, it's history. Its only hope for salvation is that ardent space cliché fans will flock in their thousands to re-live the adventure. Again.

If you persevere, there *is* an adventure to be played, and a tough one at that. Finding it is the hardest part of all.

John Kennedy



The Reactor Room - home of many a sudden death



The heart of the communication centre is the Great White Telephone

Colony
£24.99
Mindscape

Aura
Graphics
Gameplay
Value

Overall – 71%

KID GLOVES

Born in the USA?

JUST when you thought it was absolutely safe to declare the platform game extinct, another one pops up to say a big "Hi" to all semi-sentient beings everywhere. And it is customary for the reviewer to reminisce about late nights spent playing Manic Miner by the light of a 48k ZX Spectrum.

Well, not this reviewer; never owned a Spectrum, and never really liked platform games. Aha, say you, there'd better be something about Kid Gloves being a bit different, then, or this review's going binwards faster than a 15-year-old kiwi fruit.

OK, then – Kid Gloves is a bit different. The dear, sweet infant of the title chucks weapons at the nasties, which never used to happen in The Good Old Days, when Men were Men, and 8-bits were viable.

The aforementioned Minor with the Mitts must be a member of the Chelsea Young Firm, for the weapons of choice are coins. These bouncing bawbees can be used to decimalise, er, decimate the smaller enemies, but are rather short change on the bigger beasties.

What you need to do is collect the cash that lies about and spend it in one of the shops, which are rather improbably found half way up trees, and also well into pre-history.

Hang on! The plot. What of it? Well, it would seem that Kid Gloves has borrowed his uncle's boxing gloves and has found himself transported back several million years. He's got to get back to the present via some fairly zany bits of history, such as the Ice Age (cold), and The West Coast circa '67 (mellow). And if Kid isn't home before tea, well...

Kid Gloves has tried to be far too clever for its own good. The graphics are, on the whole, quite neatly done, and have a smooth, cartoon feel to them.

The downside of this is that the border required around a sprite to stop it looking blocky is virtually invisible. Thus you walk into sprites before you realise it. Either that, or (perish the thought!) the author has used a software sprite routine and hasn't done it too well.

The game sports some of the clearest samples ever heard. Apart from the samples, the-in game effects are the bare minimum required, and the tune is very Whittaker – very good, but very similar to every other Whittaker you've ever heard.

The gameplay has all the signs of a classic platform game; infuriating until you learn how and then annoying when you have to repeat the correct sequence for a screen you know. Age certainly hasn't wearied this genre – it must have been something else.

I'm about to start ranting incoherently now, so those with weak stomachs can leave. Kid Gloves is a UK product written by Timothy "I, Ball" Closs.

Never has the UK been the US. Our PAL video standard is high quality, unlike the US's NTSC, which is not. We can manage 256 screen lines where the NTSC system can only manage 200. So why does Kid Gloves go for the smaller screen?

Is the Rom Kernel Manual of Mr Closs missing a page or are we getting a clone of a game for a lesser machine?

Stewart C. Russell

Kid Gloves
£24.99
Milennium

Sound
Graphics
Gameplay
Value

Overall – 78%



Kid has no PALs in this place



Kid does his best mongoose impersonation



Jeff Walker presents...

THE DISC



WordSeeker

WORDSEEKER is a game played on a 20 x 20 grid of letters, based on the wordsearch games found in puzzle magazines.

The object is to find words which are hidden in the grid from a given list of 15. Each word from the list can be found written either forwards, backwards, upwards, downwards or in any of the four diagonal directions.

The game is mouse controlled. Once you have discovered a word, use the mouse to move the red cursor on to the first letter of the word and click on it.

The cursor will now highlight one of the words in the list on the right-hand side of the screen. Use the mouse to move the cursor to the word you have found and click on it. If correct, the word will be struck off the list and your score will be updated.

Pressing Help on the keyboard will display where each word is hidden, one at a time, but the score will not be updated. You can quit the game at any time by pressing the Escape key.

Use Textra to alter the word list. Remember to use capitals and to keep your words between 3 and 15 characters long



Each puzzle is different, even using the same word list

Creating your own puzzles

YOU can create your own words for the game by editing the *words.txt* file. Use Ed, Textra, MicroEmacs... anything that creates a plain Ascii file.

There must be at least 15 words in the file (more are OK, but not less) and you must not use numbers, only alphabetic characters. Each word should contain between 3 and 15 characters inclusive. WordSeeker will report any illegal words in the list.

WORDSEEKER was sent to us by Tim Williams of Pontypandy in South Wales. It was written in Lattice C (v5.0) on a 1 meg Amiga with second floppy drive.

THE DI

SYS

YOU have been assigned the demanding task of cleaning your sysop's hard drive from viruses. These nasty creatures have infected all sectors, and you have to wipe them off, sector by sector.

To eliminate a virus you kick a disc at it. But beware, the viruses may also kill you. It is important that you are fast and kill them all before they start to destroy your 3.5in discs.

There are 50 sectors, and on each the speed will increase. On the higher sectors the viruses are smarter and will start to hunt you.

Each virus has its own characteristic behaviour. The magnet is the most dangerous one – it will follow you everywhere and is almost impossible to hide from on the higher levels.

The mouse is very mobile, good at turning around corners very quickly. The photo-diode (among other interesting features) is good at attacking you from behind.

The joystick was created by an ugly hacker who liked to play games too much and didn't spend much time fixing his virus. It is therefore quite harmless, but it may trap you if you are not careful.

The more viruses you kill with one single disc, the more points you get, and by pushing the 5.25in discs together you will earn an extra 20 points. The surprise bonus (?) will earn you 0-20 points. When you change levels you get one point per five non-destroyed discs.

After double clicking its icon, Sys will show you a list of four options – Play, Info, Set-up and Quit.

If you chose the Play option you will be asked to enter your name (three letters). You can correct what you have typed in by pressing the backspace key.

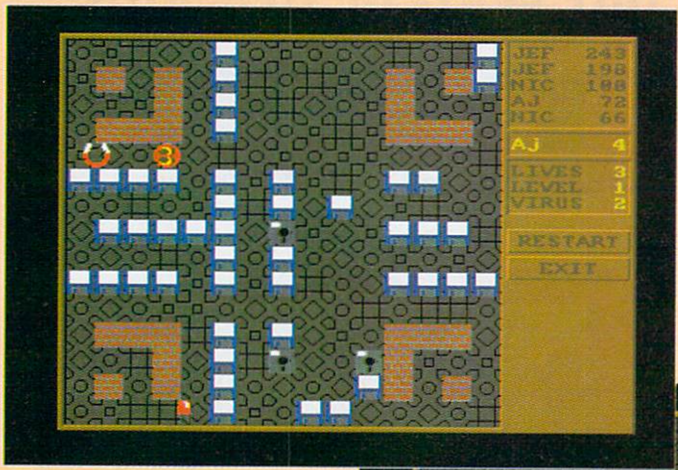
To clear everything, point at the Clear option and press the left mouse button. Press Return or click the OK option when you have finished.

The program will now start. Remember to move the mouse to the left side of the screen, otherwise the program will be in pause mode.

The Info option presents you with another menu with five options which give a brief description of the game. The Cancel option will bring you back to the main menu.

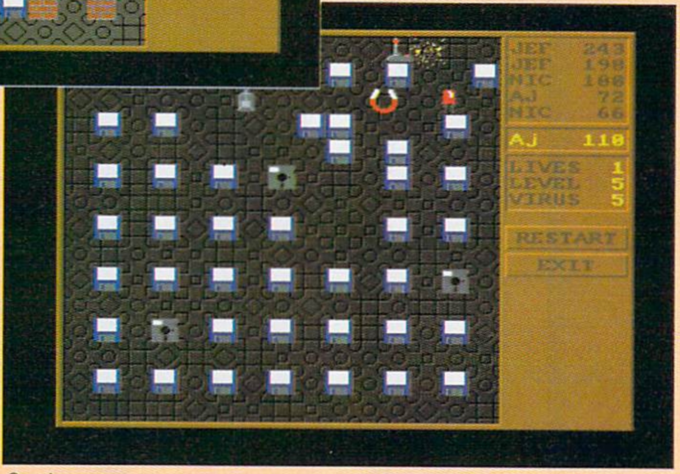
With the Set-up option you can change the default keys. You will be asked to define the keys for up, right, down, left, stop and kick. If you want to cancel this task, click Cancel. The Default option will change the definition of the keys back to their default values.

To pause the game, move the mouse to the right-hand side of the screen. When you want to continue, move the mouse back to the left- hand side.



SYS is copyright ©1989 Anders Bjerin and was written as an exercise in programming the Amiga. It took him about seven weeks to finish, and another week to debug and check. If you find any bugs or you have suggestions for the next version, please write to Anders at: *Tulevdagen 22, 181 41 Lidingo, Sweden.*

You may copy this program freely, but may not exchange it for money without written permission from the author. Nor may any part of this program be altered or used within another program.



Oops!

Controls

- Up – numeric pad 8
- Right – numeric pad 6
- Down – numeric pad 2
- Left – numeric pad 4
- Stop – numeric pad 5
- Kick – spacebar
- ● Or use a joystick in port two.
- ● F1 will make you go continuously without stopping all the time.
- ● F2 will stop you after every step.
- ● F6 turns the music on.
- ● F7 turns the music off.
- ● F10 should only be used by experienced players. It will allow you to start on level 10, where life becomes harder. Your score will be cleared, and you will have three lives again.
- ● When you have lost a life, press Kick to continue.

File tips

SYS will look in the current directory for all the files when you start the program.

If it can't find *SYS_HighScore.dat* it will try to create a new high score table.

If the disc is write protected, SYS will ask you to un-protect it. If you do not want the program to create a new high score table, click Cancel in the system requester, otherwise write enable the disc and click Retry.

The same procedure will be repeated when you quit the program and SYS tries to update the high score table.

If SYS can't find any or all of the seven sound files when the program loads, it will continue to load the other files and will not use that sound or those sounds.

If you don't like the sound effects, erase the *SYS_Sound#?* files and SYS will not allocate any space for them. Very useful if you don't have much ram and want to multi-task.

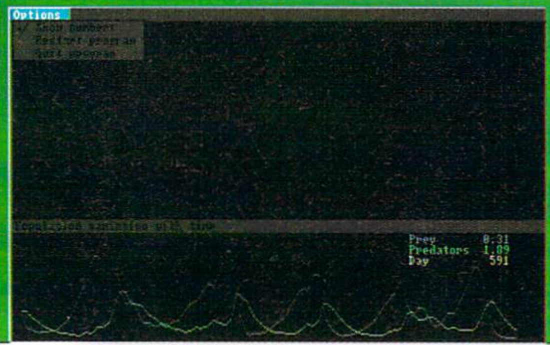
Chaos

IN the Chaos drawer you'll find three of the four listings featured in this month's article, Whose life is it anyway?, each compiled with HiSoft Basic Compiler.

Listing II, The Logistic Equation, is not on the disc because HiSoft Basic Compiler seems to have a problem with the SOUND command; it appears not to work correctly.

As luck would have it, that particular program is not dependant on speed. Besides, typing it in to Amiga Basic will be good practice for you.

See the article on page 66 for instructions on how to use these programs.



Predators vs Prey – an everyday tale of simple folk trying to live their lives

SC



Provided you've got the memory, MegaWB is the perfect antidote to a cluttered Workbench screen

MegaWB

MEGAWB makes it possible to increase your Workbench screen to up to almost 6.5 times its normal non-interlaced size.

The windowing problems you may have had with programs like TurboBackup, KwikBackUp, AudioMaster and so on, are now all in the past because you can easily drag their windows away or use the Workbench area around them.

To be able to use the whole mega-workbench screen, the bit you see scrolls every time you move the mouse.

Actually, there are two different methods to scroll the workbench screen. The method described above is called proportional scrolling. If you don't select this mode, the workbench scrolls whenever the pointer hits the edge of the screen.

You can start MegaWB by double clicking its icon or by typing its name into your CLI window.

Usage: MegaWB [P] [WIDTH HEIGHT]

The P option selects proportional mode; WIDTH and HEIGHT specify the size your workbench should have.

For example, *MegaWB P 800 400* will create a proportional mode mega-workbench measuring 800 x 400 pixels.

If you run MegaWB without specifying the size, it'll create a 1024 x 512 pixel workbench.

If you start MegaWB by clicking its icon, it will read its parameters from the icon's tool types. The tool types WIDTH and HEIGHT specify the workbench's size.

If you set PROP as the FLAGS tool type, your workbench will scroll proportionally to your mouse movements. On the cover disc the tool types are set to: FLAGS=PROP, WIDTH=1024, HEIGHT=512.

The workbench's width and height should not be set higher than 1024 because that's the maximum size bitmap the blitter can handle.

If your workbench is too large you may accidentally make a window higher or wider than 1024 pixels. This causes strange things to happen.

If you start MegaWB from within your startup-sequence before you execute LoadWB – *run megawb 800 400* for example – the workbench window will be as big as your mega-workbench and the disc icons will appear at the very right-hand border of your MegaWB screen.

To get back your ancient workbench, run or click on MegaWB once again. But first you should reduce all your windows in size and move them to the upper left-hand corner of the mega-workbench, otherwise MegaWB won't quit.

If there isn't enough chip memory available to allocate the original workbench's bitmap, MegaWB won't quit or will open a single bitplane workbench.

Known bugs

- The mega-workbench doesn't have any depth gadgets. Use Left-Amiga-M and Left-Amiga-N instead.
- Some programs are not written to run on a very large Workbench so they get a bit confused if you make their windows bigger than the size of the original workbench screen.
- It is sometimes possible to drag a window one pixel over the workbench screen's right-hand border. This trashes the display a bit but doesn't cause any serious problems.

Tricks and tips

MEGAWB becomes even more useful when you've installed Matt Dillon's popular DMouse program (Fish Disks 145, 160, 168), allowing you to scroll through your mega-workbench with an accelerated mouse pointer.

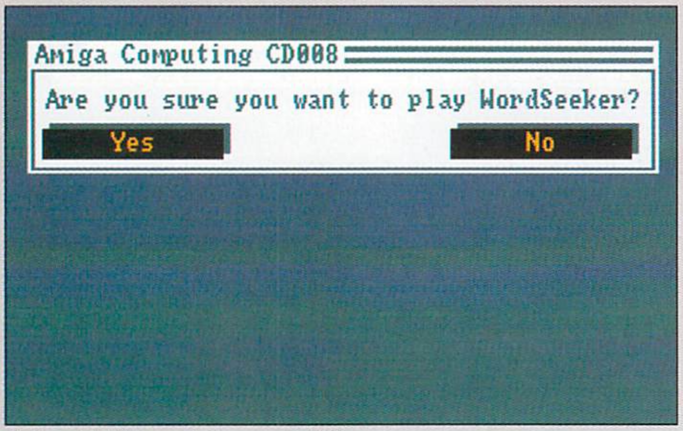
To use DMouse together with MegaWB you have to set DMouse's input handler priority to a value higher than MegaWB's – to at least 52.

It's very useful to have a memory extension of more than one meg because a 1024 x 1024 pixel workbench eats 256k.

MEGAWB is public domain and as such is freely distributable. However the program remains copyright ©1988 Fridtjof Siebert. Bug reports and ideas to him at: *Nobileweg 67, 7000 Stuttgart 40, West Germany.*

THE DI

CustReq v3



Fed up with Y/N prompts in your scripts? So use CustReq and have proper requesters

CUSTREQ, short for Custom Requester, is a glorified Ask command for your startup-sequence. I've used it this month to ask for confirmation of your selection in the StartUp requester. Take a look at *s:startup.1* and *s:startup.2* to see how I've done it.

The program is best placed in your C: directory. It has a very long command line, requiring four compulsory parameters, plus another four optional ones.

This will almost certainly mean you'll need a word processor or text editor that scrolls beyond column 80 to easily create or edit a startup-sequence. Ed will do the job if you have nothing else. See the usage box for the command line syntax.

All strings must be in quotes if they contain spaces. To make the "text" string more than one line long, use a | (Shift-\) character to specify the end of a line.

If a default of 1 is given, the requester will try to appear with the positive (yes choice) gadget under the mouse. If a default of 0 is given it will appear with the negative (no choice) gadget under the mouse.

The –x and –y flags override this function. Use –x –2 to force the requester to appear with the positive gadget under the mouse. Use –x – 3 to make it appear with the negative gadget under the mouse. Use –x –4 to make it appear in the centre of the screen.

If a timeout value is given the requester will timeout and return the default value (1 or 0) after the specified time.

If the positive option is chosen a return code of 5 (warn) is generated, otherwise 0 is generated.

The Y key has the same effect as the positive gadget and the N key has the same effect as the negative gadget. You can also press the key corresponding to the first letter of the text in the desired gadget.

CUSTREQ is not public domain, but may be distributed freely. It is copyright ©1990 Jonathan Potter. Bug reports and ideas to him at: *P.O. Box 289, Goodwood, SA 5034, Australia.*

Usage

CUSTREQ is used in the following manner, assuming a continuous line:
CustReq "hailtext" "text" "pos" "neg" [-d default] [-t timeout] [-x xpos] [-y ypos]

- **hailtext – the title text of the custom requester.**
- **text – the main text of the custom requester.**
- **pos – the positive option of the custom requester.**
- **neg – the negative option of the custom requester.**
- **default – the optional default value, either 1 (yes) or 0 (no).**
- **timeout – the optional timeout value in seconds.**
- **xpos – the optional x position of the window.**
- **ypos – the optional y position of the window.**

Example

```
  CustReq "My Request" "Do you
want to load Workbench?|If you
select Load, Workbench will be
loaded.|If you select Don't Load,
you will be|left with a CLI
window." "Load" "Don't
load" -d 1 -t 5
  If WARN
    LoadWb
    Echo "Workbench loaded"
  EndIf
```

NoPal Reset

THIS program will detect if your PAL Amiga thinks it is an NTSC one, that is, the infamous PAL reset bug has happened! It's a handy little program that should live in your C: directory. Call it into action as the first line of your startup-sequence. It will reset the Amiga if it does not boot in PAL mode, hence the name NoPalReset.

NOPALRESET is public domain. The source and executable code is copyright ©1990 Declan Mc Ardle.

Startup v2.0

STARTUP is a similar utility to Dneishe-Start on the December 1989 cover disc. It does the same job, but in a more user-friendly and graphically pleasing way.

It allows the use of different batch files so you can have the choice of custom startups for different situations. I've used it this month to give you three choices, although you can have up to 10 if you like. My startup-sequence looks something like this:

```
cls
winsize 0 11 640 245
run >nil: c:startup 99 3
;0:Load Workbench
;1:Play SYS
;2:Play WordSeeker
```

Actually, the path to the Startup program on the cover disc is different than above, but I've adjusted it to *c:startup* because that is where you should put the startup program – in your C: directory. The 99 is the timeout value, set it to between 5 and 99. If Startup does time out (because the user sat staring at the screen instead of clicking a gadget) then the first batch file will be executed, in other words s:Startup.0.

From this you can probably work out that clicking on choice 1 executes s:Startup.1, clicking on choice 2 executes s:Startup.2, and so on up to s:Startup.9.

By the way, I found that if I use more than two lines in a startup-sequence before the Startup command, strange things happen. Like massive negative numbers in the timer box. Erk. The second parameter, the 3, tells Startup how many menu items there are. There's a third, optional, parameter that I didn't use.

The full documentation is on the cover disc in the Startup drawer. Please read it a few times and experiment a bit before getting angry because you can't get it to work. If all else fails, you can always edit the startup files I used in the S: directory or the cover disc.

SC

MusicBox 1.8

HERE we go with another MusicBox upgrade. Since v1.4 there have been a fair number of changes, the two most important being compatibility with files compressed with PowerPacker (October 1989 cover disc) and a change in the number of songs MusicBox can handle.

The biggest song selection number has been increased from 9 to 99. So it is now possible for MusicBox to choose from *100* different songs.

The SoundFX files that MusicBox plays may now be compressed using Nico Francois' PowerPacker in Data File mode. This feature is provided thanks to Nico's publication of the PPData source code.

The song file on this month's disc has been compressed using this method. Remember, while compressed songs may include the SoundFX executable header, they must be crunched using *Data File* mode.

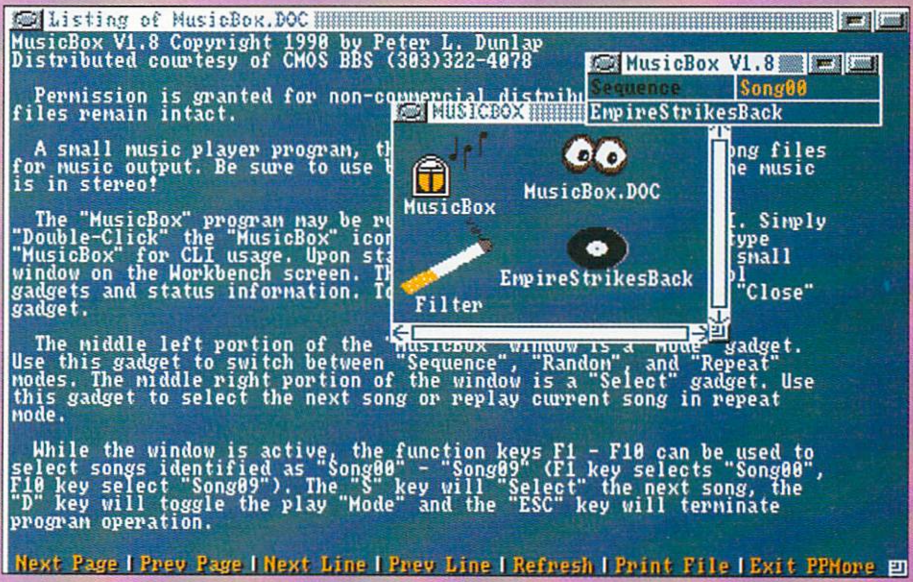
The compression technique used by PowerPacker usually results in a 20 to 40 per cent reduction in file size. This permits a larger number of song files to be included on a given media.

But there is a price to pay. Decompression takes time – about one second per 50,000 bytes. If you can wait a second or so between songs, this is the way to go, especially if you are running from floppy disc.

If you're new to MusicBox and want to know more about it, double click on the MusicBox.DOC icon in the MusicBox drawer.

This month's tune is a brilliant rendition of two intermingled space fantasy themes. The first is a well known march as you have never heard it before. The second I seem to recognise as the theme from an epic film. Anyone know its proper title?

MUSICBOX is freeware but remains copyright ©1989-90 Peter L. Dunlap. This program distributed courtesy of CMOS BBS (0101- 303-322-4078).



Listen to it and read about it at the same time – isn't multi-tasking wonderful?

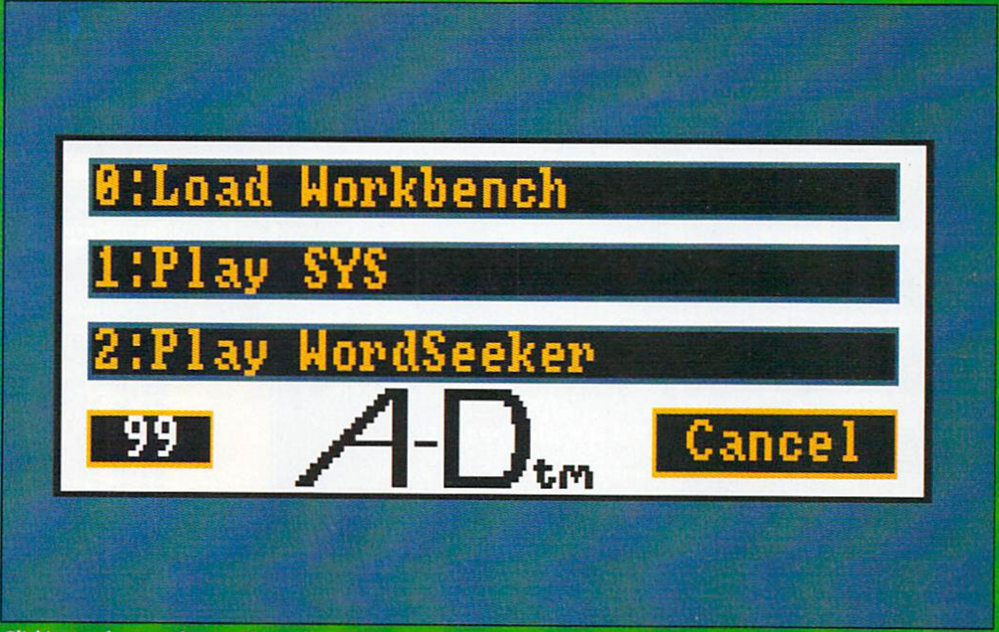
The Code Clinic

THIS drawer will be a regular feature on the disc from now on and will contain the main source listings from the The Code Clinic articles.

Double click the icons to read the listings. They are all saved in pure Ascii format, so you can load them straight into your favourite program editors.

Listing I is example machine code source to display five bitplanes, Listing II is additional source to dispose of on-screen garbage, Listing III is AJ's fortune cookie program in C, and Listing V is Michael Bassett's small piece of code that releases ram grabbed by the GVP hard drive.

See The Code Clinic on page 29 for more details.



Clicking on the countdown gadget will reset Startup to the value specified in the command line

STARTUP was written by Weston Fryatt and Paul Davis. It is "ourware" meaning that they wrote it and if you find it useful then any small donation would be greatly appreciated and would help along the further development of Amiga utilities. It is public domain and copyright © Acropolis Development.

Although Startup is a public domain utility you may not sell or charge any money for the use of it, and the authors ask that if you distribute it you leave all the notices and docs intact.

Bug reports and shareware donations to: *Acropolis Development, P.O. Box 81134, Bakersfield, CA 93380, USA.*

THE DI

Rock The House

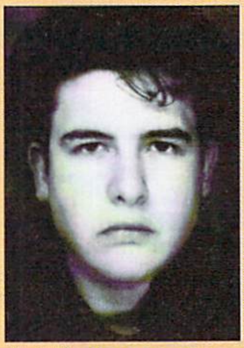
HOWIE DAVIES is 17 and unemployed. But does he let it get him down? Sure he does. I mean, with eight O grades and two highers, plus certificates in bass guitar and keyboard, you'd think that *someone* in Edinburgh would offer him a job.

As well as guitar and piano, Howie plays the trombone, composes music, likes Turkey Kievs for tea and *loves* exclamation marks! (That one was just for you, Howie.)

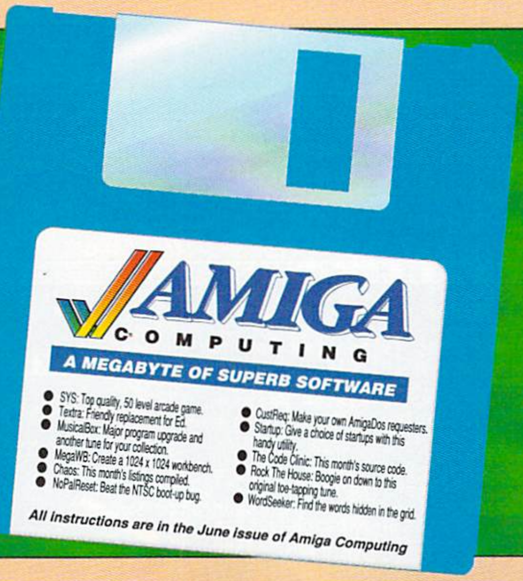
This is serious talent going to waste.

You don't believe me? Well turn up the volume knob, double click on Rock The House in the Reader Contributions drawer, pin back your ears and let the sounds flow over you.

● *Are you a budding musician looking for fame and fortune? If so, perhaps the Amiga Computing cover disc can give you a little push up the ladder. Original stuff only, please, preferably in self-contained modules.*



Rock The House composer Howie Davies



Disc problems?

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If you subscribe to *Amiga Computing* and your disc has got damaged in the post, please return it to:

Amiga Cover Disc, Database Direct, FREEPOST, Ellesmere Port, South Wirral, L65 3EB.

You will be sent a replacement with our compliments. Please allow 28 days for delivery.

Textra

THE worst thing about Ed is having to remember all those keypresses. Escape this, Escape that... it drives me potty. The only Ed commands I know and can remember are Esc-D to delete the line the cursor is on and Esc-X to save and exit.

Nevertheless, because it uses the workbench screen, because it loads quickly and because it doesn't take up much ram, there are times when I'd much rather use Ed than a full-blooded word processor – usually for writing a quick script file or altering my startup sequence.

If only Ed had an easy user-interface. If only I could mark blocks by pointing at the screen and using the mouse to drag a big orange box over the bits I want to cut and paste. If only it gave me a requester when I wanted to save my file under a different name. If only it would let me open and swap between multiple files. If only...

Then I found Textrc. This little gem must be the easiest to use text editor I have ever come across. It doesn't do anything complicated – it can't talk to a printer, for instance, and it can't handle lines of text that are wider than the screen – but it does everything a text editor should do, quickly and efficiently.

I don't have to tell you how to use it. My guess is you won't even need to read the doc file.

In its crunched format, Textra is only about 10k larger than Ed, so you should easily be able to delete Ed from your C: directory and save Textra in its place.

Cunning Amigans will rename Textra as Ed to save typing and to enable Textra to interface with any other programs that invoke Ed. Saves running round changing all the various config files you may have from C:Ed to C:Textra.

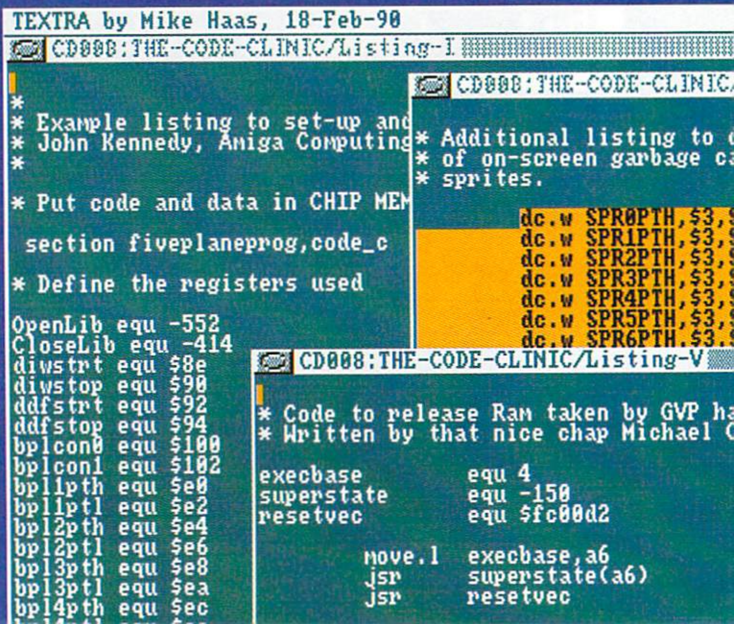
One thing I've noticed is that Textra is not too hot on error messages. For instance, if you try to save a file to a write protected disc, Textra will refuse to save it, but won't tell you why. Ah well, can't have everything I suppose.

Printing out the doc file

WHEN you double click on the Textra.DOC file it will be displayed by the file reader, PPMore. Should you want a hardcopy of this documentation, switch your printer on-line and click on the Print File gadget at bottom right.

However, before attempting to obtain a hardcopy you should copy the correct printer driver for your printer into CD008:devs/printers, use Preferences to set a system-configuration file to load this driver and copy *that* system-configuration into CD008:devs. You should, of course, be working with a copy of the cover disc, not the original.

The cover disc has the EpsonX[CBM_MPS-1250] printer driver in devs/printers, and it is this



SC

NON-SUBSCRIBERS

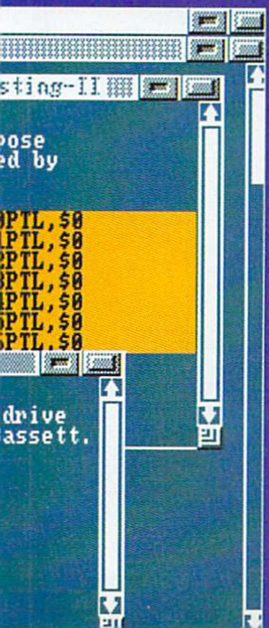
If you bought your magazine in a shop and when you got home you found your disc was damaged, please return it, within two months of the on-sale date of the magazine, to:

Amiga Cover Disc, Stanley Precision, Unit F, Cavendish Courtyard, Sallow Road, Welldon North Industrial Estate, Corby, Northants, NN17 1JX.

You will be sent a new disc with our compliments. Please allow 28 days for delivery.

driver which the Amiga will use by default, assuming you booted from the cover disc, when you click on the Print File gadget in PPMore. It should work for most Epson compatible printers.

TEXTRA is freeware. It was written in JForth Professional v2.0 and is copyright ©1989-90 Mike Haas.



Multiple files and point-and-drag blocks are two good reasons to use Textra in place of Ed

AMIGA COVER DISC

Earn up to £1,000!

WE are always looking for original contributions for the *Amiga Computing* cover disc. If you think something you have written is good enough to share with everybody else who reads the magazine, send it along and we'll have a look.

If we like what we see, it could earn you up to £1,000.

Please let us know which files, if any, your submission needs from the Workbench disc. If it is clickable, feel free to design an original icon. But don't make it too large. And please use the standard Workbench colours.

Bear in mind that a program which does not run on a 512k machine would have to be exceptionally good to make it on to the disc.

Amiga Computing will buy your work on an all rights basis. We are not prepared to pay for programs which are already in the public domain or have been spread by other means. However we are quite prepared to launch your program into the public domain as either freeware or shareware if that is what you wish.

Please enclose this coupon, or a photocopy of it, with your submission. Include a file on the disc with full documentation, your name, address, phone number and a few details about you and your kit. A photograph of yourself would be nice, but isn't essential.

Don't forget to duplicate on the disc label the program name, your name, address and phone number. If you want your disc back, enclose a self-addressed, stamped envelope.

Name ....Age.........years
Address ....
....
....
Daytime phone..After ....am
Evening phone..After.......... pm
Submission name ....
Submission size....................bytes in total

We will accept submissions up to 500k in total length, including documentation. But the shorter your submission, the better chance it stands of getting on to the disc. If it is a compiled or assembled program include all the source code, but do not count this in the size of the submission. Write a brief description of your submission below. If it consists of more than one file, describe what each file is for. Attach an extra sheet of paper to this form if necessary:

....
....
....
....
....
....

Sign this declaration:

The stuff on this disc is mine. I didn't nick it off someone else. It hasn't been published before and I haven't submitted it elsewhere because I want *Amiga Computing* to publish it.

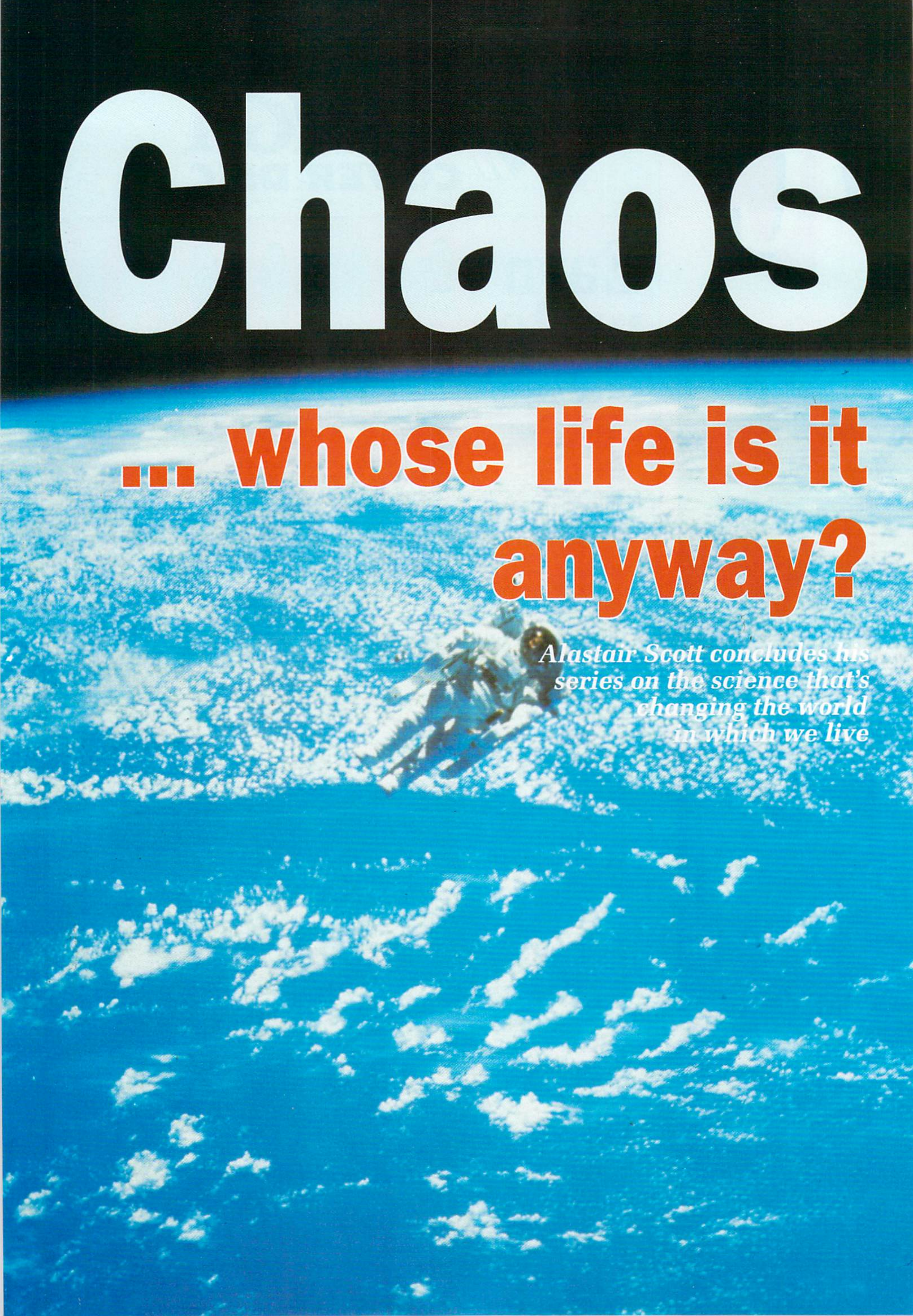
Signed .... Date................................

Post your submission to: Amiga Computing, Cover Disc Submissions, Europa House, Adlington Park, Adlington, Macclesfield SK10 4NP

Chaos

... whose life is it anyway?

Alastair Scott concludes his series on the science that's changing the world in which we live



MECHANICAL systems got the lion's share of mathematical attention from the 16th century onwards; it was not until the nineteenth century that population was studied. In 1803 Malthus stated that population increased geometrically as food supply increased linearly. Strangely, he didn't notice the obvious consequence.

Thirty-four years later Verhulst derived an equation which showed that population increased geometrically at first, then the rate of increase slowed until an equilibrium constant population was reached.

In 1925, the Lotka-Volterra or prey-predator equations, which describe the behaviour of two competing populations such as foxes and rabbits, were derived. Listing I solves these equations, giving you the size of the populations each simulated day. Two parameters need explanation.

The first is a damping parameter. When it is zero the populations oscillate, otherwise they converge to a value at which both populations will remain for ever.

The second is a weather parameter, which alters the solutions in a remarkably realistic way by introducing a random amount of "weather" between 0 (no weather) and 1 (occasional big climatic changes) each week. Try various values. Do the solutions seem plausible?

This program allows me to clear up a common misunderstanding. The solutions with non-zero weather are random, but they are *not* chaotic because the input to the equations is in itself random. Garbage In, Garbage Out – chaos is Order In, Randomness Out.

In the 1970s Feigenbaum manipulated Verhulst's equation. Stephen Hawking, in *A Brief History of Time*, used one equation, $E=mc^2$. I am also allowed one equation, and here it is – the most important and most studied equation in all of chaos, sometimes known as the Logistic Mapping:

$$x_{n+1} = kx_n(1-x_n)$$

The prescription is simple: Take k between 2 and 4 and x_0 randomly between 0 and 1, put x_0 and k into the right-hand side to give x_1, put x_1 and k in to get x_2 and so on until you generate a series of numbers which you can plot out. Feigenbaum did this with a pocket calculator until somebody taught him Fortran. Listing II does it for you in Amiga Basic.

Verhulst's equation always converges to a steady solution, no matter what the value of k is. The logistic mapping shows completely unexpected behaviour. For k less than 2.97 it converges to a steady solution; for k between 2.97 and 3.5 it oscillates with period 2; for k between 3.5 and 3.57 it oscillates with the period doubling to 4, 8, 16, 32 ....

If k is greater than 3.57 there is no period – chaos! If you don't believe me, run the program, put in some values, watch and listen; you should at least be convinced that chaos doesn't sound very nice.

Listing III calculates, slowly and painfully, a bifurcation diagram, which shows this period doubling very clearly – k is plotted from left to right, and the amplitudes of the solution for each k from bottom to top. Each fork in the path represents a period doubling.

Try entering 2.8 and 4 to start off with, then 3.5 and 4 to zoom in on the zone of chaos. You should notice

➤

```
'
' Solves the Lotka-Volterra equations
'
  SCREEN 1,640,256,3,2
  WINDOW 1,"Prey versus Predators",(0
,0)-(631,242),0,1
  RANDOMIZE TIMER:DEFINT a
  DIM SHARED ynew(1)
  DIM SHARED k1(1),k2(1),k3(1),k4(1)
  PALETTE 0,0,0,0
  PALETTE 1,.33,.33,.33
  PALETTE 2,1,1,1
  PALETTE 3,0,.47,1
  PALETTE 4,0,1,.47
  PALETTE 5,1,.4,.4
  MENU 1,0,1,"Options"
  MENU 1,1,2,"   Show numbers   "
  MENU 1,2,1,"   Restart program"
  MENU 1,3,1,"   Quit program   "
  FOR a=2 TO 4:MENU a,0,0,"":NEXT
  ON MENU GOSUB choice:MENU ON
  WHILE TIMER
    day=0
    endflag=0
    shownum=1
    xcoord=8
    CLS:COLOR 2
    INPUT "Damping parameter? (0-2) "
,damp
    INPUT "Weather parameter? (0-1) "
,w
    PRINT
    INPUT "Initial number of prey? (0
-5) ",y(0)
    INPUT "Initial number of predator
s? (0-5) ",y(1)
    CLS
    WINDOW 2,"Population variation wi
th time",(0,162)-(631,242),0,1
    WHILE NOT endflag
      IF day MOD 7=0 THEN
        weather=1-w*RND
      END IF
      RungeKutta y()
      WINDOW OUTPUT 1
      PSET(50+50*y(0),160-25*y(1)),5
      WINDOW OUTPUT 2
      PSET(xcoord,80-4*y(0)),3
      PSET(xcoord,80-4*y(1)),4
      IF shownum THEN
        LOCATE 1,60:COLOR 3
        PRINT USING"Prey       ##.##";
y(0)
        LOCATE 2,60:COLOR 4
        PRINT USING"Predators ##.##";
y(1)
        LOCATE 3,60:COLOR 2
        PRINT USING"Day        #####";
day
      END IF
      day=day+1:xcoord=xcoord+1
      IF xcoord=632 THEN
        xcoord=0:CLS
      END IF
    WEND
    WINDOW OUTPUT 1:WINDOW CLOSE 2
  WEND

SUB RungeKutta(ya())STATIC
  SHARED damp,weather
  lv ya(),k1()
  FOR a=0 TO 1
    ynew(a)=ya(a)+k1(a)*.01
  NEXT
  lv ynew(),k2()
  FOR a=0 TO 1
    ynew(a)=ya(a)+k2(a)*.01
  NEXT
  lv ynew(),k3()
  FOR a=0 TO 1
    ynew(a)=ya(a)+k3(a)*.02
  NEXT
  lv ynew(),k4()
  FOR a=0 TO 1
    ya(a)=ya(a)+(k1(a)+2*k2(a)+2*k3(a
)+k4(a))/300!
  NEXT
END SUB

SUB lv(yy(),deriv())STATIC
  SHARED damp,weather
  deriv(0)=4*yy(0)-damp*yy(0)*yy(0)-2
*weather*yy(0)*yy(1)
  deriv(1)=-3*yy(1)+weather*yy(0)*yy(
1)
END SUB

choice:
  item=MENU(1)
  IF item=1 THEN
    shownum=1-shownum
    MENU 1,1,1+shownum
  ELSEIF item=2 THEN
    endflag=-1
  ELSE
    MENU RESET
    WINDOW CLOSE 1
    WINDOW CLOSE 2
    SCREEN CLOSE 1
    END
  END IF
RETURN
```

Listing I

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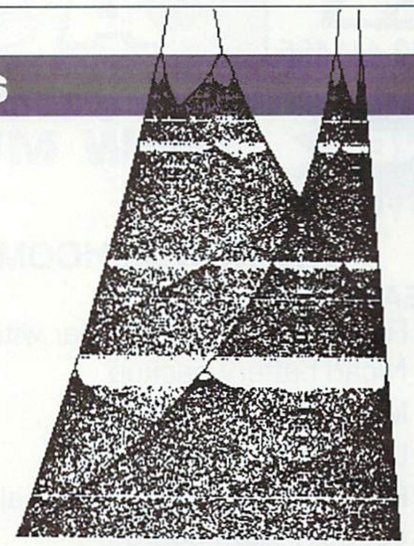
islands of order appearing as dark bands with only a few points contained in the great sea of chaos. This is no accident. It has been explained, although the explanation is far too complex to go into here.

Call k_n the value of k at which the *n*th period doubling occurs. For example, k_0 is roughly 2.97 and k_1 is about 3.5. Form the ratio $(k_{n+1} - k_n)/(k_{n+2} - k_{n+1}) = \partial$. As *n* gets bigger and bigger, ∂ approaches a constant 4.6692016, to seven decimal places.

To Feigenbaum's – and everybody else's – amazement, this number is always the same, it doesn't matter what sort of function is on the right-hand side of the above equation. So Feigenbaum's Constant, as it was quickly christened, is universal – like π, e and friends – which means it should be possible to find it by experiment, a stunning surprise.

It *has* been found, to enough accuracy to confirm the theory, as a result of a whole host of experiments in different fields of physics like fluid effects in helium at low temperatures, laser feedback (feeding part of the output back into the input), electronic circuits and computer simulations of particle accelerators and superconductors.

Order inside chaos



EVEN with the simplest equation the region of chaos in a bifurcation diagram has an intricate structure. First the bifurcations produce periods of 2, 4, 8, 16.... then chaos begins, with no regular periods.

But as the system is driven harder windows appear with odd periods. A stable period 3 appears and then the period doubling begins again with 6, 12, 24.... The structure is infinitely deep. When portions are magnified they turn out to resemble the whole diagram.

If you can, build the circuit diagram shown on the next page, then scrounge an oscilloscope and a signal generator. Turn up the voltage, watch the trace breaking into 2, 4, 8.... parts, and note down the voltages at which the period doublings occur; can you estimate ∂?.

WHERE do the Mandelbrot set and all the pretty fractal pictures come in? Although certain fractal operations can be carried out on chaotic systems, the results are not very illuminating. Fractals appear to be of limited use, some scientists even argue that they are no use at all and that any research on them is wasted.

You must try and forget any ideas that fractals and chaos are the same thing.

Contrastingly, chaos is useful, although not quite as eye-catching. It has been tried in such diverse fields as medicine and economics, with

```
'
' Solves the logistic equation
'
  SCREEN 1,640,256,3,2
  WINDOW 1,"The Logistic Equation",(0
,0)-(631,242),0,1
  RANDOMIZE TIMER
  PALETTE 0,0,0,0
  PALETTE 1,.33,.33,.33
  PALETTE 2,1,1,1
  PALETTE 3,1,1,0
  PALETTE 4,1,0,0
  MENU 1,0,1,"Options"
  MENU 1,1,1,"Restart program"
  MENU 1,2,1,"Quit program "
  FOR a=2 TO 4:MENU a,0,0,"":NEXT
  ON MENU GOSUB choice:MENU ON
  DEFINT a,c,x,y
  DIM pitch(8)
  FOR a=0 TO 8:READ pitch(8-a):NEXT
  WHILE TIMER
    CLS:COLOR 2
    INPUT "Parameter k? (0-4) ",k
    endflag=0
    xcoord=8
    colour=3
    u=RND
    CLS:PRINT USING"k=#.#####";k
    WHILE NOT endflag
      u=k*u*(1-u)
      tone=8-INT(u*8+.5)
      ycoord=240-224*u
      SOUND pitch(tone),2,255
      IF xcoord=8 THEN
        PRESET(xcoord,ycoord)
      ELSE
        LINE-(xcoord,ycoord),1
        LINE(xcoord-2,ycoord-1)-STEP(
4,2),colour,bf
        PSET(xcoord,ycoord),colour
        colour=7-colour
      END IF
      xcoord=xcoord+8
      IF xcoord=632 THEN
        CLS
        PRINT USING"Parameter #.#####
";k
        xcoord=8
      END IF
    WEND
  WEND

choice:
  IF MENU(1)=1 THEN
    endflag=-1
  ELSE
    MENU RESET
    WINDOW CLOSE 1
    SCREEN CLOSE 1
    END
  END IF
RETURN

DATA 261.63,293.66,329.23,349.23
DATA 392,440,493.88,532.25,587.23
```

Listing II

```
'
' Displays the bifurcation diagram
'
  SCREEN 1,640,256,2,2
  WINDOW 1,"Bifurcation Diagram for t
he Logistic Equation",(0,0)-(631,242)
,0,1
  RANDOMIZE TIMER
  PALETTE 0,0,0,0
  PALETTE 1,.33,.33,.33
  PALETTE 2,1,1,1
  PALETTE 3,.66,.66,.66
  FOR a=1 TO 4:MENU a,0,0,"":NEXT
  DEFINT b,x
  COLOR 2
  INPUT "Lower value of k? (2-4) ",kl
ower
  PRINT
  PRINT "Upper value of k? (";MID$(ST
R$(klower),2);"-4) ";
  INPUT "",kupper
  CLS
  stepsize=(kupper-klower)/628
  FOR k=klower TO kupper STEP stepsiz
e
    LOCATE 1,1
    PRINT USING "Calculating: k = #.#
###";k
    xcoord=xcoord+1
    u=RND
    FOR b=1 TO 50
      u=k*u*(1-u)
    NEXT
    FOR b=1 TO 200
      u=k*u*(1-u)
      PSET(xcoord,238-228*u),3
    NEXT
  NEXT
  LOCATE 1,1
  PRINT"Press mouse button          "
  WHILE NOT MOUSE(0):WEND
  MENU RESET
  WINDOW CLOSE 1
  SCREEN CLOSE 1
END
```

Listing III

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unexpected success. Because the theory is in its infancy – 13 years being scarcely out of the cradle in scientific terms – more useful results will no doubt turn up.

Despite what I have said, my final program – Listing IV – looks quite good. The de Jong mapping is a two-dimensional variation on the logistic mapping, found by accident by somebody playing with an IBM PC. Try different values, chosen at random, of the four parameters.

Can you create spiral galaxies, globular clusters and other astronomical objects? In spite of appearances, as far as anybody knows this mapping has not the slightest thing to do with physics.

The moral to be drawn from this series on chaos is that you must not stop looking over your shoulder and worrying when thinking about science.

At the turn of the century even great scientists like Lorenz, a founder of relativity, and J. J. Thomson, an unknowing father of quantum mechanics, believed that physics was essentially dead and that all there was left was dotting i's and crossing t's.

There then came a great whirlwind of relativity, quantum mechanics and, after the others had been more or less got to grips with, chaos.

Today it is clear that less is known about the world than anyone would have dared think a century ago, although much progress is being made.

Chaotic PD

Chaos: ***On Panorama disc 23B, this program lets you play around with the Hénon mapping, which is important in astronomy and particle physics.***

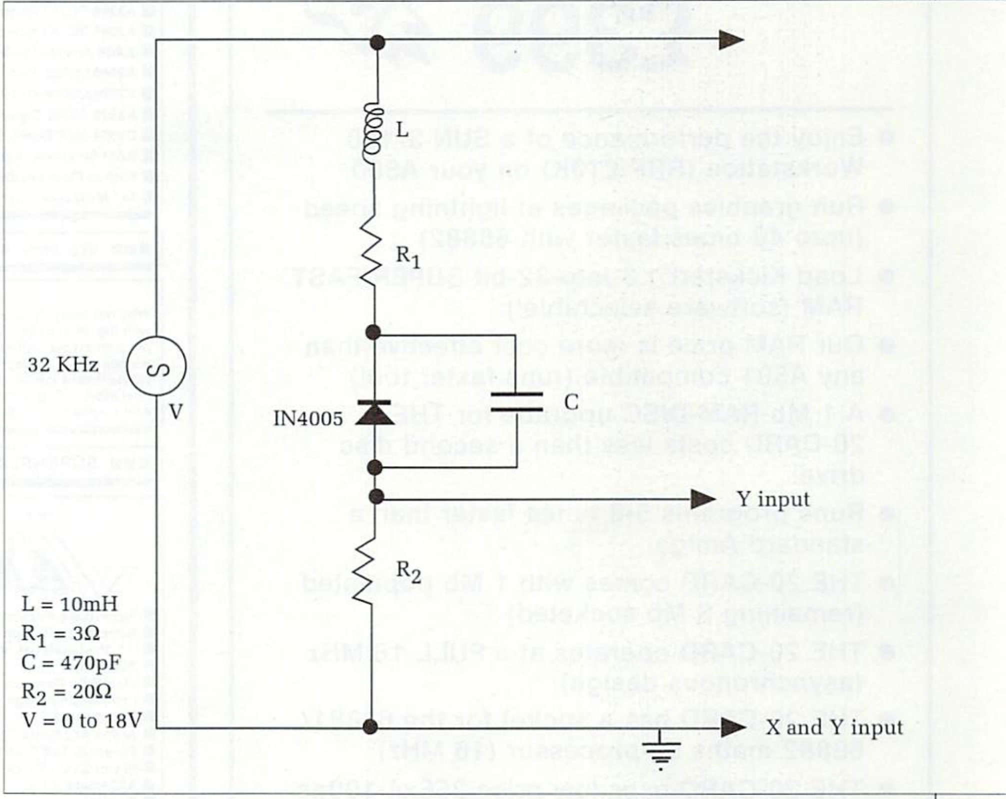
GravSim 1.5: ***On Fish disc 223, this program solves the N-body problem for N<7.***

Further reading

Chaos ***James Gleick, 1989, published by Carousel, £6 in paperback.***

Universality in Chaos ***Predrag Cvitanovic, 1989, published by Adam Hilger, £15 in paperback.***

Makers of Mathematics ***Stuart Hollingdale, 1989, published by Penguin, 1989, £8 in paperback.***




```
'
' Explores the de Jong attractor
'
  SCREEN 1,320,256,4,1
  WINDOW 1,"The de Jong Attractor",(0
,0)-(311,242),20,1
  DEF FNrand=INT(RND*3*SGN(RND-.5)*10
000)/10000
  RANDOMIZE TIMER
  DEFINT c,e,i
  PALETTE 0,0,0,0
  PALETTE 1,.33,.33,.33
  PALETTE 2,1,1,1
  FOR a=3 TO 13
    PALETTE a,(a-3)/10,0,(13-a)/10
  NEXT
  PALETTE 14,0,1,0
  PALETTE 15,0,0,0
  MENU 1,0,1,"Options"
  MENU 1,1,1,"Show parameters"
  MENU 1,2,1,"Input start    "
  MENU 1,3,1,"Random start   "
  MENU 1,4,1,"Quit program   "
  FOR a=2 TO 4:MENU a,0,0,"":NEXT
  ON MENU GOSUB choice:MENU ON
  WHILE TIMER
    IF endflag<>1 THEN
      a1=FNrand
      a2=FNrand
      a3=FNrand
      a4=FNrand
    ELSE
      WINDOW CLOSE 2
      WINDOW OUTPUT 1
      CLS:COLOR 2
      INPUT "First parameter  A? (-3
to 3) ",a1
      INPUT "Second parameter B? (-3
to 3) ",a2
      INPUT "Third parameter  C? (-3
to 3) ",a3
      INPUT "Fourth parameter D? (-3
to 3) ",a4
    END IF
    CLS
    x=0:y=0
    colour=3
    endflag=0
    WHILE endflag=0
      x1=SIN(a1*y)-COS(a2*x)
      y1=SIN(a3*x)-COS(a4*y)
      PSET(160+80*x1,128+64*y1),colou
r

      colour=colour+1
      IF colour=14 THEN
        colour=3
      END IF
      x=x1:y=y1
    WEND
  WEND

choice:
  item=MENU(1)
  IF item=1 THEN
    WINDOW 2,"Show",(40,40)-(126,72),
22,1
    WINDOW OUTPUT 2
    COLOR 14
    PRINT USING " A +#.####";a1
    PRINT USING " B +#.####";a2
    PRINT USING " C +#.####";a3
    PRINT USING " D +#.####";a4;
    WINDOW OUTPUT 1
  END IF
  IF item=2 OR item=3 THEN
    endflag=item-1
  END IF
  IF item=4 THEN
    MENU RESET
    WINDOW CLOSE 1
    WINDOW CLOSE 2
    SCREEN CLOSE 1
    END
  END IF
RETURN
```

Listing IV

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The dude

Cyberspace is a deeply wonderful experience, a way to escape from the humdrum existence of real life into an alternative reality. But can it be experienced on an Amiga? Peter Ceresole went to California to find out

NORTH of the Golden Gate Bridge, on a steep hilly street in Sausalito, there's a brown wood shingle house with an old red Volkswagen microbus parked under the overhang. Sausalito is a very easy universe to inhabit. The shrubs and trees almost bury the houses in a cascade of colour and green.

Down the street (straight down – it's one-in-four everywhere here) the sea shines back and, beyond the island of Alcatraz, San Francisco and the Bay Bridge shimmer in the Californian air. No kidding, it really is like that. Honest.

Inside the brown wood shingle house there's a quite other reality. Eric Gullichsen looks through his eyephones into the world he has built.

"Let's have a look at this bit of surreal estate", he grins.

He dives into the square patch below, flying into the shapes on the chequerboard plane. He has a six-degree-of-freedom joystick; press, lift or rotate the ball and that's exactly what happens, the plane tilts and rotates below him. He turns his head and he can see where he's looking, in three dimensions.

Cruise up to a column, lift the head and look up at the top, look down at the base, around it at the other shapes. There's a hut at the other side of the space. He flies forwards between the columns and enters the hut. There's a computer in there.

"Let's go have a look at the machine..."

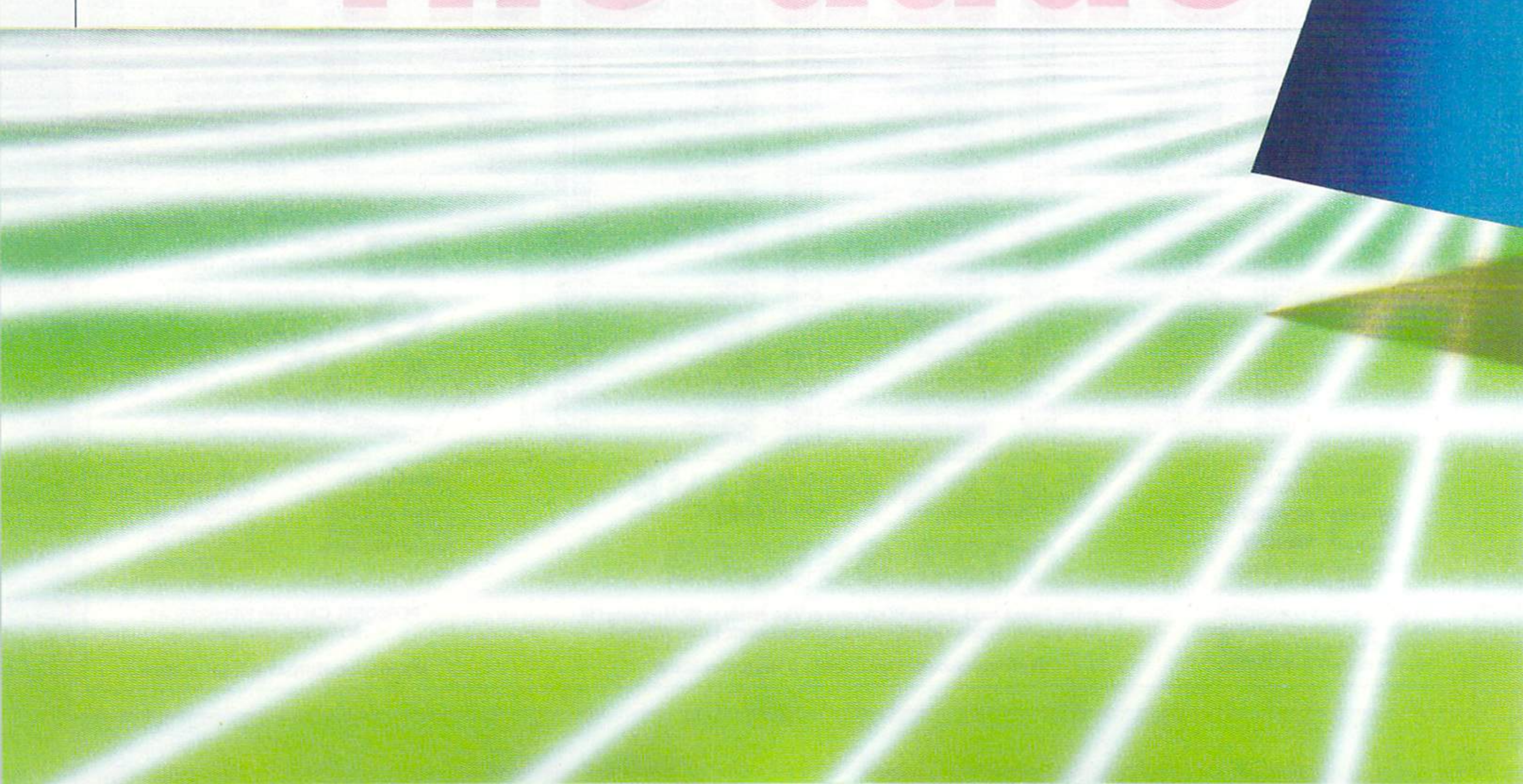
Move around to the screen. Dive in. No doubt what type of computer it is. There's the red and white chequered ball from the Boing! demo hovering, this time, above a pyramid. Fly up to the ball and look down. Inside this unreal computer is a slippery world; things are only themselves when you look straight at them. Turn your head and they change. If a flower blooms in the forest, does it still bloom if no one is there to see? Not here it doesn't.

Because *this* is cyberspace. It exists only inside a couple of Amiga 500s. Each powers the display for one eye, each eye looking through a lens system at the LCD colour display from a Sony Watchman. The two Amigas each construct the scene from the viewpoint of one eye and, looking with both eyes wide open through the eyephones, there is a perfect illusion of depth.

Cyberspace has its literature, written by William Gibson, in a series of three brilliant roller coaster rides, Neuromancer, Count Zero and Mona Lisa Overdrive. William Gibson's protagonists move in the Matrix, the sum of all human communication where the only reality is data constructs.

The Eastern Seaboard





Fusion Authority is a red pyramid, the Stock Exchange in London is a yellow plane over which a Japanese gangster's daughter is conveyed in a blue boat shape "to reduce the disorientation". Students scrawl the day's hacked access codes for AT&T on the side of the data construct of the university, and AT&T sweeps through regularly to erase them. Totally wonderful stuff.

When he started, Gibson told me: "I had no idea about forseeing the future. I was interested in the way we watch television now, how we respond to the availability of information". He started in 1982 when, if you fired up DBase II, you got a dot on screen. That was all there was in those days, a dot. But now at the very least there's Workbench, on a micro whose real price is a quarter of a CP/M machine back then. And cyberspace is beginning to exist for real, in Club Caribe.



Eric Gullichsen shows off his eyephones. Inside are two Sony Watchman LCD television screens

CLUB CARIBE is an amazing thing. Think about it – an interactive real time shared universe with several dozen graphic locations. The characters move around independently but simultaneously, communicate by speech bubbles and can hug, kiss, steal things from each other (and give them back)... even get married in the chapel.

There are 15,000 members and up to 150 have been logged on at one time. So what does it run on? A mainframe? Now here's the really unbelievable bit – it runs on the C64 and the comms are 300 baud, packet switched, $4.80 an hour right the way across the USA.

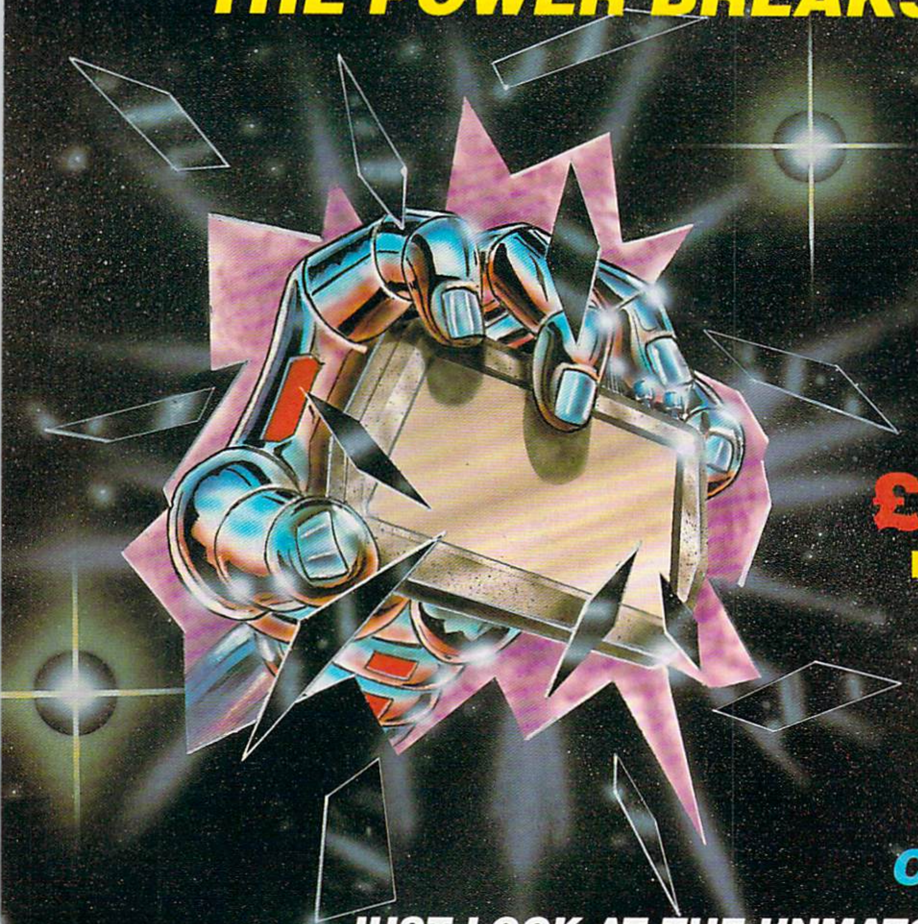
It originated in Palo Alto, 20 miles down the San Francisco peninsula from Sausalito. Writing the program was not trivial. Programmer Randy Farmer told me that the graphics are all bitmapped and the only sprite is the tail that connects a character to its speech balloon.

He said that the whole thing is in machine code and that the secret is to ➤

on the hill



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have all the locations, characters and bits of action in a local library, held on disc. Everyone has the same disc. A single byte down the line repositions a character anywhere on screen, and on every set that's logged on the character turns and walks across to the new position. Same for all actions. It's an elegant demonstration of how little you need to transmit.

But never mind the techniques, it's behaviour that shows that this is a real alternative universe. The characters are *real* people. The first Club Caribe divorce came two weeks after the first marriage.

Randy, who stood up as best man at that first wedding, says: "I'm not sure the two people were the sex they said they were. People like to manifest themselves as women in Club Caribe because women get more attention".

Life in cyberspace could get kind of complicated.

"The next thing is to raise the resolution", says Randy, "so that people get an even greater sense of reality, so they can relate even more closely to the virtual world".

There's a Japanese version out now which runs on the IBM PC with much faster and more detailed graphics. An Amiga version would need money and time for the programming. But then you'd believe that a micro can fly.

Flying is *it*. At the Ames research lab of Nasa, just another five miles down Route 101, they're using half-a-million dollars' worth of hardware to build a serious virtual reality. The operator wears, not just the eyephones but a glove the location of which is tracked by the machine.

As well as the computer-generated scenery, the man sees his hand in the virtual universe too. He can touch things. He gets a tingle back through transducers in the fingers of the glove when he does. When he grasps "objects" he can lift or move them.

He has the strength because nothing weighs anything here, and he can fly because he weighs nothing either. The operator becomes Superman.

The universe has 3D pull-down menus that the operator can see by turning his head and can select by "touching". To gain higher speed and resolution the images are shaded monochrome. The device could be used for training and for work in remote or hostile places like the inside of nuclear reactors or out in space.

THE gear to do this – the computers, the headset, the glove, the devices that track the head and the hand – costs around half a million dollars. Thirty miles back up the road in Sausalito, a company called Autodesk is using a similar rig to do 3D computer aided design, running in colour on a big IBM PC. Its got the cost down to $300,000. Pay with plastic and take it away? Maybe.

Almost all the code for Autodesk's system was written by Eric Gullichsen and Pat, who live and work in the brown wood shingle house on the hill.

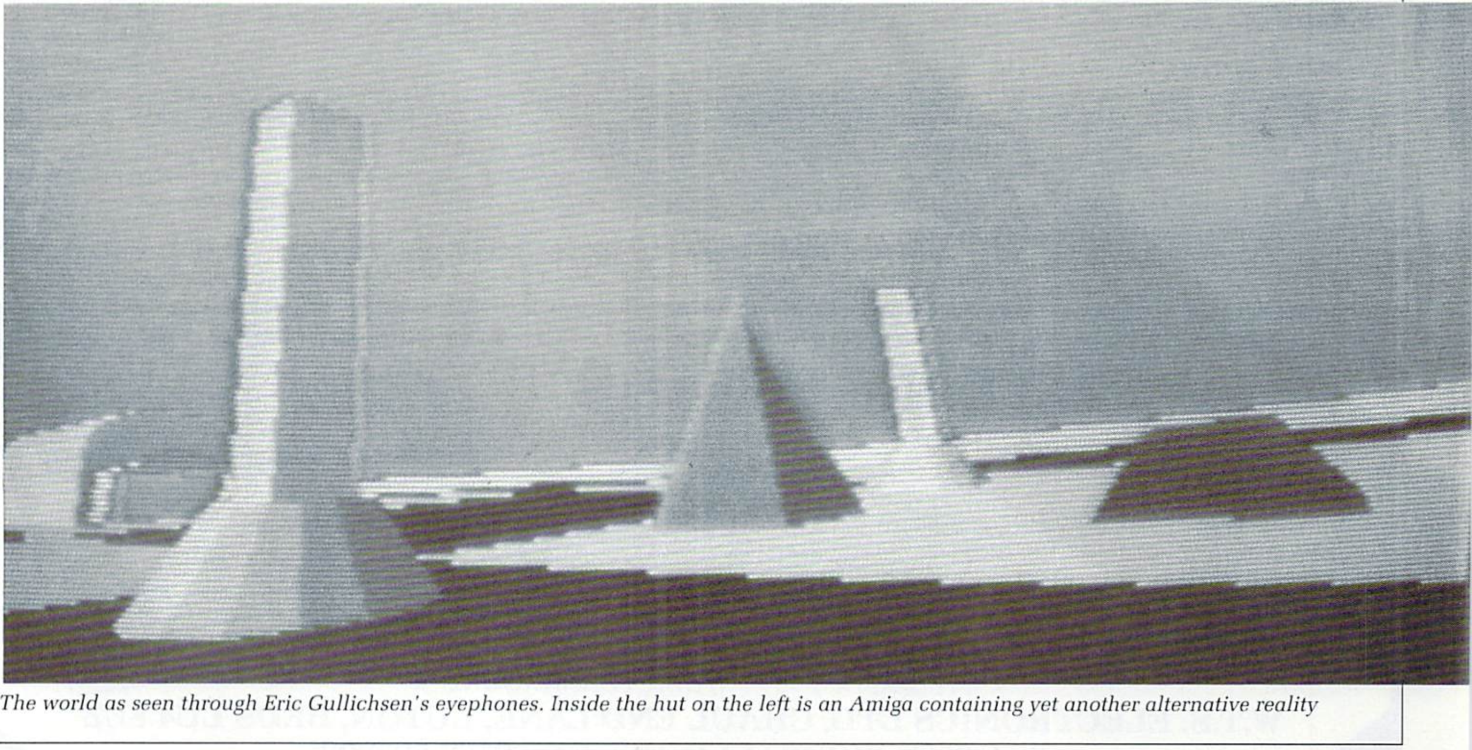
Eric believes that this stuff should be hitting the street. But the rig *he* has built costs only $9,000. He's done it by using stock hardware whenever he can. His universe runs on two A500s fitted with 68020s. The virtual universes are designed on Sun workstations – there's one in the living room, one in the back room and a Sparc machine in the bedroom.

While he works in the bedroom, Pat programs in the living room. They're developing a machine-independent description language for the objects – as the hardware gets better the software will operate to the limits of the available resolution.

The drawing programs are written in Aztec Mix-C on the Suns, which are all Ethernetted, and compiled on an Amiga. The Amigas have proprietary 32-bit memory to speed up the redrawing of the changing scenery. At the present frame rate of around four a second the illusion of movement is quite amazing, the action completely involving.

At perhaps $20,000 on the market, this is pin money in America. Eric believes that at this price "the street will find its own use for it". He's set up his own company, Sense8, to see how the street reacts.

The machines will get better, there's no doubt of that. The only question is what use we'll make of it all.



The world as seen through Eric Gullichsen's eyephones. Inside the hut on the left is an Amiga containing yet another alternative reality

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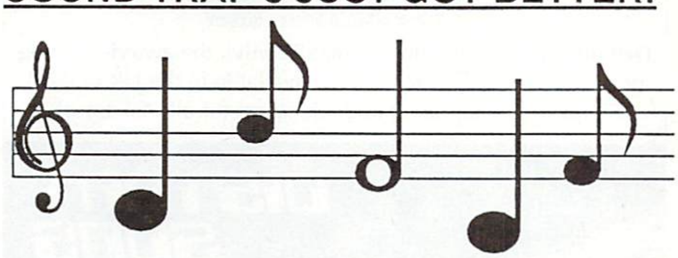
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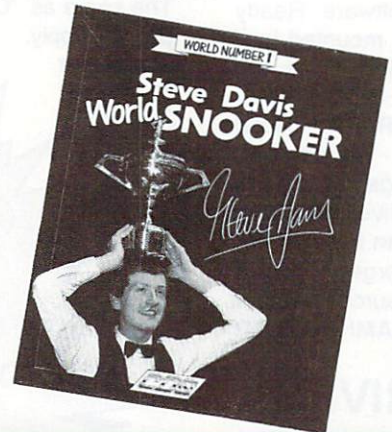
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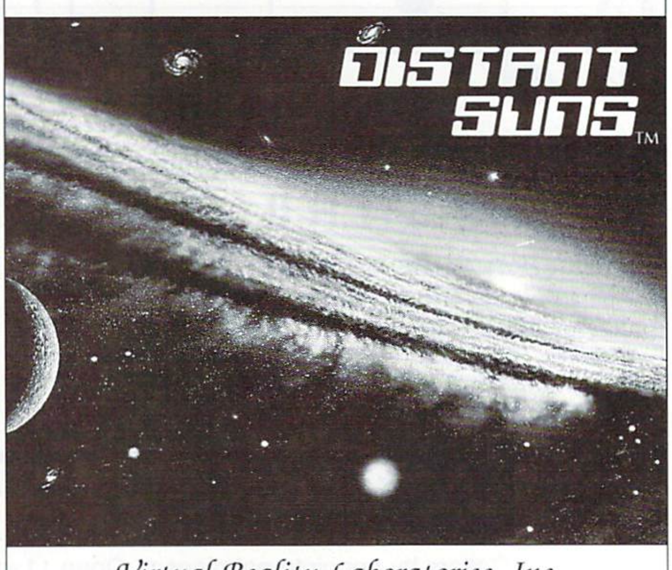
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Like heaven on earth

John Kennedy takes a trip through the universe with a program tailor-made for the amateur astronomer

HOW many stars do you think are in our galaxy? Thousands? Millions? It has been calculated that our sun is only one of 10 billion stars in a universe filled by a multitude of similar galaxies. In other words, there are an awful lot.

If you stood in your back garden on a cold, clear moonless night, you could probably see about 1,000 stars and perhaps one or two of the brighter planets. If you then got into your car and drove into the country, far away from the pollution of the towns and cities, you would be able to see more stars than you could count in a lifetime.

We are lucky enough to live in an exciting universe which needs only the smallest of tools to explore but the most complex of machines to understand.

The computer has always played an important part in helping astronomers in their calculations. Even the ancient druids had to use the latest in silicon hardware to help predict the changing of the seasons. If we could only find the instruction manual, Stonehenge would probably still be useful today.

Traditionally, the early electronic computers did little more than produce streams of numbers to pinpoint stars' positions. Only in the past five years or so have graphics become good enough to begin to model the night sky with anything approaching realism. With the capabilities of the Amiga, suddenly things start to become very real indeed.

The excellent manual accompanying Distant Suns recommends you view its graphics in a dark room, with the contrast and brightness adjusted for maximum enjoyment. The manual is correct – it looks fabulous. It's like having your own private planetarium. If only it would do Dark Side of The Moon laser shows...

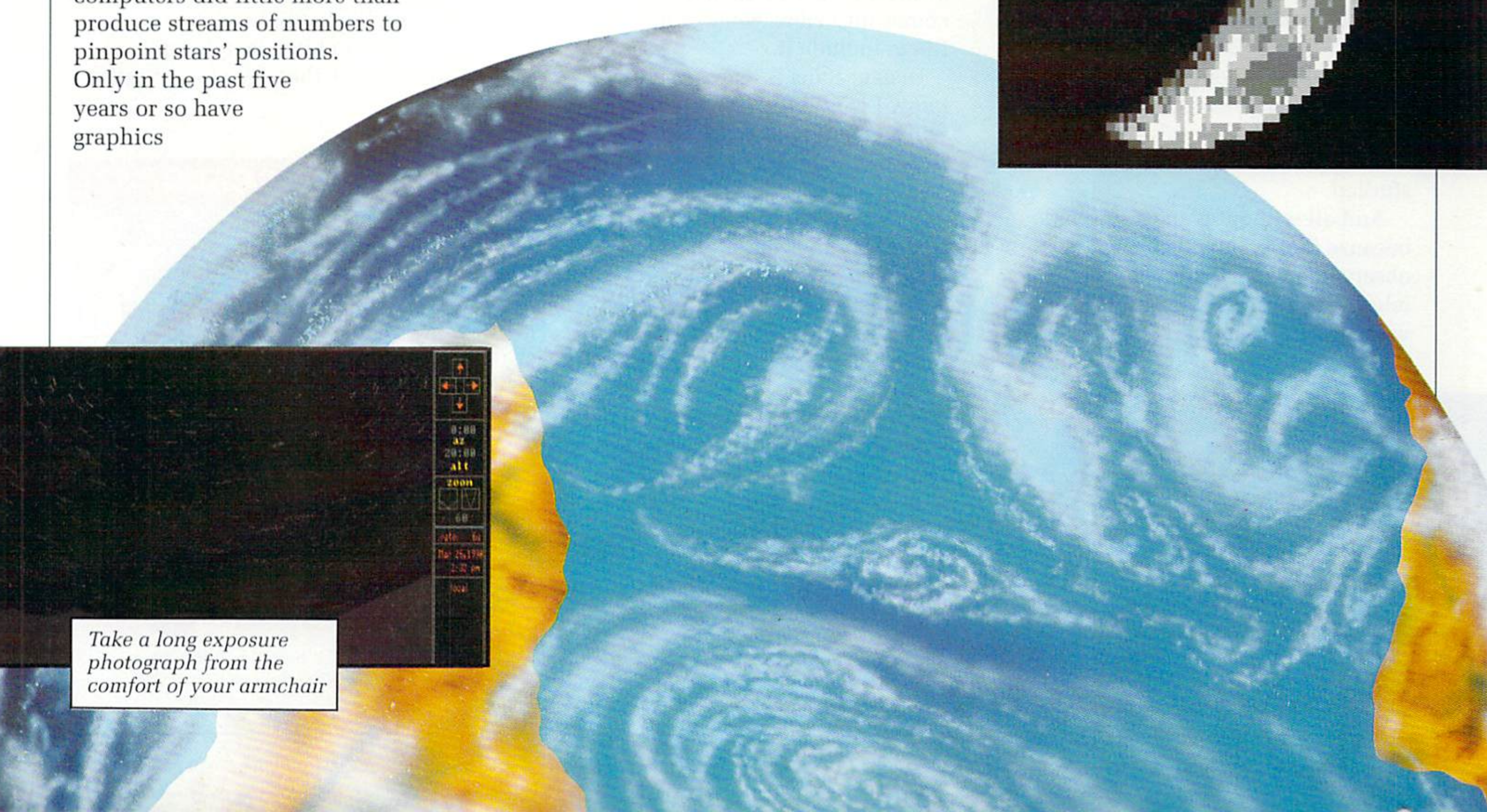
Probably the best starting display is obtained by selecting the Local option from the pull-down menus. After setting your latitude and longitude coordinates, choose any time and date from 9999 BC to AD 9999.

Almost immediately – almost, because there are a lot of sums to do – you are presented with the view from your garden. If, like mine, your garden isn't transparent, you can also select the landscape facility to help you find your bearings. It provides a solid slab of grey to block out the stars beneath the horizon.

For that final touch of realism you can select the amount of light in the neighbouring area to take street lights into account.

The outline of the constellations will be drawn in if you wish, to provide an easy way to identify them. ➤



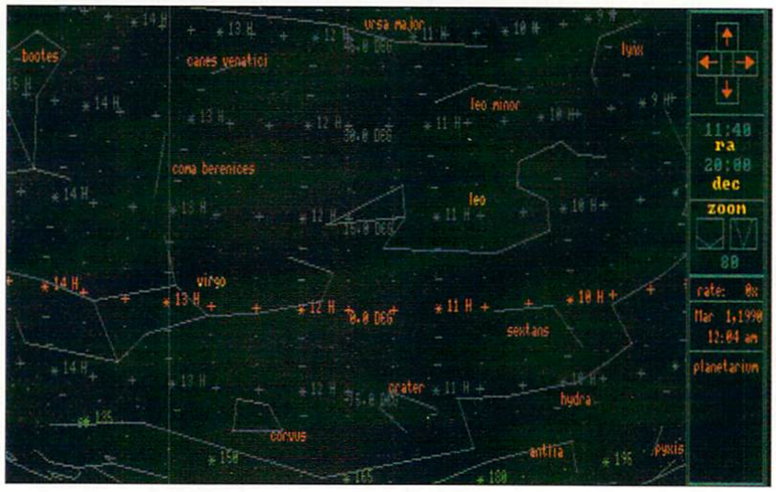


Take a long exposure photograph from the comfort of your armchair

➤
The stars can be named individually, and data on them displayed or sent to the printer.

By switching on the timing system the sky will be re-drawn as Earth rotates in real or accelerated time – perfect for watching the retrograde motion of the planets as they suddenly change their heavenly minds and start going backwards for a bit.

An overhead view of the entire solar system is available to help explain their apparently complex motion. An excellent teaching tool.



All the constellations, including those not normally visible from Macclesfield, can be named to help the casual observer

IMAGINE the largest telescope ever built, with a huge magnification and a colossal light gathering power. Now aim it at a star. What would you see?

Sadly, you would still see only a tiny point. It might be a very bright point, but still only a point. Stars are too mind-bogglingly far away to be anything other than geometric pin-pricks.

To the casual observer they can seem cold, clinical and lifeless. Dull even. But being the interested part-time astronomers we Amiga users are, we know that the stars are anything but dull. There are enough variables and binaries up there to keep even the most ardent skywatcher happy.

For those looking for something slightly more dynamic, the planets are a joy to behold. This is when a reasonably cheap telescope will be at its best.

Suddenly Jupiter is no longer a point but a tiny disc, complete with bands and spot. Saturn's rings become visible. The ice cap on Mars can be studied.

And all without going outdoors, because these phenomena can be observed on-screen by selecting the telescope option. It produces a wonderful display in the corner of the screen which operates in the same inverted way as a real telescope for extra authenticity. The Moon and planets can also be viewed through the imaginary 'scope to examine their phase and any prominent features.

Flexibility is the name of the game. Distant Suns comes with a database of more than 2,200 stars, but it can be expanded to 9,100 with promised data discs. The stars provided are enough to be getting on with, unless you are interested in some whose magnitudes are quite low.

The Messier catalogue of objects, effectively a collection of fuzzy objects that might be mistaken for comets, is included; 250 of the more interesting New General Catalogue elements are also provided.

A user defined data section is available, so if by chance a new comet comes into view, you can update the file to include it.

Distant Suns is a program that I know I would use. Picture me if you will, preparing to go on one of my stargazing excursions. Warm duffle coat, thermal gloves, little bobble hat and tartan Thermos flask full of something that started life as coffee. Thank goodness it's dark and no one will see me.

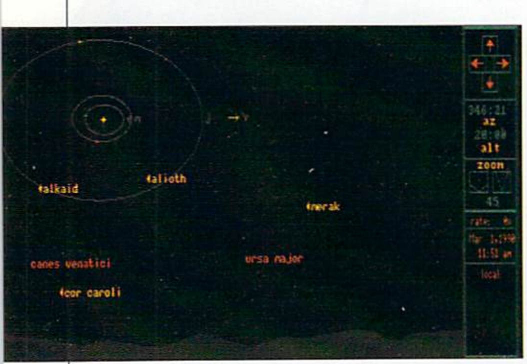
I plan the observations I want to make before I go, which involves sitting at my desk with my calculator and a big book of astronomical data. I work out which planets are likely to be visible, because looking at planets is my favourite thing.

So I scribble down some rough coordinates, grab my rotating planisphere and some HP5 black-and-white film from the fridge, then load up the boot of the car with my second-hand 3in reflector. A short drive to somewhere dark and I can begin to settle down and do some looking.

Normally by this time I realise I made a mistake in my sums. Plus I can no longer read my handwriting. What time was Jupiter rising again? Whoops, forgot the moon was going to be so bright. Usually, it's a right mess; I drink the horribly lukewarm contents of my flask and come home again.

However, now I am an Amiga owner with a copy of Distant Suns. So I load it, make sure it is set for 53°22'N, 2°14'W and the correct date. Now I can find the planets I want, dump the screen to an art package and print it out on my printer. As a result I have a specific, accurate skymap of exactly what I am likely to see.

The only problem is it doesn't predict the weather. It's cloudy again. Sigh.



The motion of the planets can be more easily understood by watching their orbits as they snake across the screen

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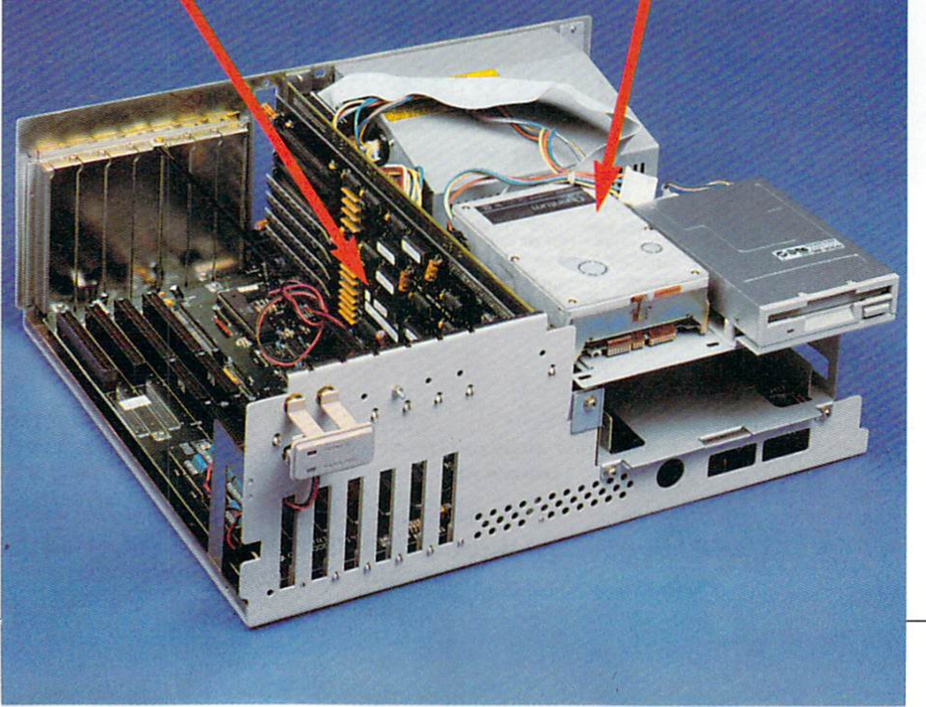
the power game

While the UK waits to see Commodore's A3000, Stewart C. Russell looks at a rival system that is available now.

ROLLS-ROYCES and Amigas have much in common. Not just because they are the best of their kind, but also because they are both, in the words of R-R's marketing department, adequately powerful.

For most of the time the Amiga won't keep you waiting for too long, showing a clean pair of heels even to speedy PC clones. But for the dedicated number cruncher, the stock Amiga simply isn't fast enough.

This fact hasn't escaped the attention of a fair number of peripheral manufacturers. There are several speed-up boards on the



A 33 MHz 68030, 4Mb of 32 bit ram and an FPU – all in one slot

The Quantum 40Mb drive has a read access time of 11milliseconds

market, ranging from the cheap and moderately useful, through the mid-priced and deeply incompatible, right up to the very zenith of desktop computing. Zenith-wise, the GVP 33 MHz system is it. Cost-wise, likewise.

For the last couple of years, Great Valley Products (GVP to its friends) has kept the Stateside market enthralled by the regularity and quality of its peripherals. Perhaps best known in the UK for its hard drives, GVP is a bunch of guys who left Commodore to go it alone and have frequently beaten Commodore-Amiga to the market with better equipped and lower cost products.

Commodore has been threatening to release a 68030 board for the 2000 for about a year now, and is running true to form by not having it on the market yet. Commodore perceives the main market for 68030 systems to be in Unix, an operating system designed around the tenet "Speed kills".

The GVP 68030 accelerator – snappily titled the A3001 – is available in speeds from 16 to 33 MHz, an optional 68882 maths co-processor and four or eight megabytes of very special 32-bit ram.

The package can also include a Quantum ProDrive 40 or 80 megabyte hard drive. By now we're talking serious moolah. You would not even consider running games on this system. Well, not all the time anyway.

Alarm bells may be ringing for some of you. A standard Amiga's processor runs at about 7 MHz, derived by quartering the signal from a 28 MHz oscillator. In order to keep the custom chips happy, previous accelerators have had to run at twice the processor speed and then hang about for up to half a 7 MHz cycle when talking to the custom chips. This is not as bad as it sounds, but things get awkward when genlocks are introduced.

Genlocks hijack the system clock in order to synchronise with the video system. What is an acceptable clock accuracy for video work is also acceptable for the 7 MHz system; but a double speed processor may object to the slight distortion and odd things may start to happen.

GVP's solution is unorthodox, yet very simple. Basically, the processor runs as fast as it wants and then slows down when it has to do any input or output to the motherboard.

This asynchronous design gives tremendous flexibility in that any clock speed may be used, not just a multiple of 7 MHz. In fact, with a minor change to the auxiliary logic chips on the board, a 50 MHz 68030/68882 could be used.

‘This is the best aid to creativity there is’

That would be fast, but very, very expensive; the 50 MHz processor alone costs around $750 in the States, and then there's the small consideration of the cost of 60 nanosecond ram chips...

The Motorola MC68030 is a wonderful chip. It combines the 32-bit capabilities of the 68020 with the 68851 Memory Management Unit, adds an extra 256 longwords of cache, making 2k bytes in total – 256 longwords for data, and 256 longwords for instructions. And it has a few more tricks up its sleeve.

The memory management unit allows tasks to have a private area of ram which cannot be altered by concurrent tasks. AmigaDos wasn't written with the MMU in mind; Unix won't work without it.

ANOTHER fabulous trick of the 68030 is Burst Mode. This allows, in this implementation, four longwords to be read into the cache in only eight clock cycles. On a 33 MHz system that's a theoretical data transfer rate of over 63.5 megabytes per second!

The disadvantage of using Burst Mode is that special ram chips which can be accessed in 4-bit chunks are needed. These chips aren't in widespread use in the industry, so are expensive. Still, with the two processor caches, and Burst Mode enabled, the GVP system runs at zero wait-states – the processor never has to skip a cycle to wait for the ram chips.

The 68882 Floating Point Unit is a clever device which watches the instructions coming into the processor. When it finds one that it knows about, it grabs it and processes it, leaving the 68030 free to do other things.

The FPU has special hardware and long (64-bit) registers to handle both single precision and double precision floating point mathematics. As the standard AmigaDos maths libraries are already FPU-compatible, existing software runs that much more quickly. The FPU runs asynchronously from the 68030, so it is possible to replace the 33 MHz FPU and oscillator with a 50 MHz unit. Anyone for real-time ray tracing?

FITTING the GVP unit is simplicity itself. Open the 2000 box and fit the board into the co-processor slot. Put it all back together and run some software to make sure everything works OK.

If you buy the GVP AT hard drive at the same time, you still have only one board to fit; the hard drive controller lives on a piggy-back board and thereby doesn't use any slots.

The only slight aberration in the otherwise good manual occurs in the fitting of the hard drive. Both sections on fitting the 68030 board and fitting the hard drive are very good; unfortunately, they happen to be in the wrong order. Much amusement can be had when, after carefully fitting the 68030 board, the manual tells you to take it back out to fit the hard drive.

Instead of following the SCSI crowd, GVP has used the same interface as in the IBM PC AT, since it is just as fast, simpler to implement, and the discs and controllers are cheaper.

GVP's design allows direct memory access to the on-board 32-bit memory, giving very high data transfer rates with no interference from chip-intensive overscanned displays.

The Quantum drives recommended by GVP have a write-access time of 19 milliseconds and a read-access time of 11 milliseconds. This seeming paradox is due to the unit reading an entire track into a 64k cache – because data files tend to live on contiguous sectors, the access time appears faster than it really is.

Installing the hard drive is a mere matter of fixing some screws under the drive and plugging in some connectors. The installation software is extremely simple and well written, being a series of small programs

➤

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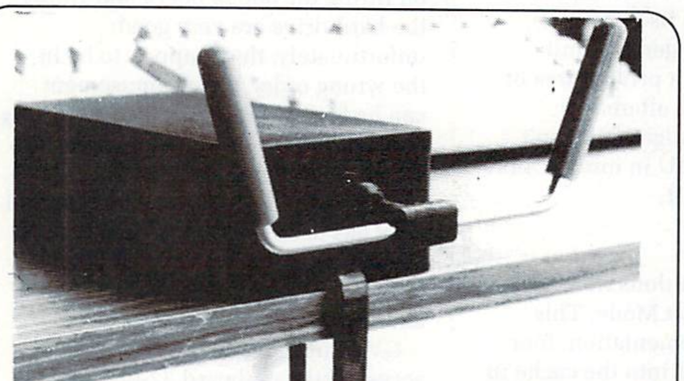
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tacked together with AmigaDos script files. They may lack pretty displays, but they work, and quickly too.

The one installation program will also do for the 68030/68882, so there's little danger of forgetting to install something.

Testing a system like this is difficult. Because there are no fully accredited performance tests for the Amiga, it is not possible to give absolute figures. Also, as this is a professional system, no professional (at least, none I know) ever runs benchmarks, they run applications.

So the performance of this system was measured relative to my own A500, which has three megabytes of ram and a 20 megabyte A590 hard drive. The tests are based on running applications for which I found the A500 to be annoyingly slow.

Over a large number of tests, the GVP system works out around eight times faster for general work. This figure rises to about twelve times for IEEE maths work (thanks to the 68882) and drops to around four for hard drive intensive work.

The system isn't any faster for pure blitter work; after all, the blitter isn't being run any faster. Unlike some 68020 systems, no software runs any slower; Amiga Basic has a habit of doing this on lesser accelerators.

DEVISING tests for this machine proved difficult. In many cases, things that took a reasonable length of time on the A3001 took a completely unreasonable length of time on the A500, time I couldn't afford to waste.

OK, so it's obvious that this machine is very, very fast, but how robust is the implementation?

Physically, the boards are neatly made, and Quantum hard drives are built on a tank-like cast chassis. Software-wise, I couldn't fault it.

GVP uses Dave Haynie's SetCPU to patch various functions, enable Burst Mode in both caches, and to relocate and protect an image of the Kickstart rom in 32-bit memory.

I could only crash the system by running a program whose sole object in life is to cause a guru or to run some completely AmigaDos-unfriendly dirty cracker code, which does all sorts of nasty things like self-modify (and confound the cache) and store data in the upper 8 bits of an address. Yucko. The system can be set up to boot in 68000 mode, but there is very little software – none I could find – that refuses point-blank to behave. The game Battle Squadron came up with odd graphics, but worked OK; that is the only glitch I encountered.

The A3001 is the best aid to creativity there is. No more the long wait to see if a render has worked as expected, nor the agonising finger-drumming period as Deluxe Paint III anti-aliases.

AmigaDos throws text at the screen as fast as the blitter can handle; it scrolls too fast to follow. You want a hard drive partition optimised? BAD does it in *five* minutes. And yes, the A3001 even alleviates Mandelbrot angst. For what more could one ask?

If you use an Amiga for professional work, you will be able to justify the cost of this machine; the clients won't notice the extra expense, and the payback period will be over before you know it. Tony Ianiri of Power Computing says he has sold about 60 of the 28 MHz GVP systems in the UK alone, so there *is* a demand for speed.

But for home use? Well, if you have over three grand to lavish on your A2000, why not? You see, the GVP system is the perfect bit of reverse snobbery. There are no outward signs of what you have purring away inside the box; how exquisitely delicious!

The words "I'm really going to miss this machine" don't begin to capture the slightest nuance of how attached to it I've become. Sigh, got any spare change for a 68030, mate?

Benchmark descriptions

Ray Trace: Fast floating point 320 x 200 HAM image generated by Eric Graham's SSG ray tracer. (A frame from The Juggler.)
Smooth: Smooth a 320 x 256 extra halfbrite (64 colour) brush on to itself using Deluxe Paint 3.
Load Anim: Load a 360 frame animation into Deluxe Paint 3 from hard drive. (Frames interlaced, single bitplane 640 x 512.)
X-CAD: Recover deleted Columbia Shuttle drawing from Undo buffer. (Approximately 750 entities using X-CAD Designer.)
Mandelbrot: Generate plot of the Mandelbrot Set. Integer test used 32 bit 68000 integer maths; IEEE test used 64 bit floating point. Generated by MandelVroom v2.0. (Integer Max Iteration = 512. IEEE Max Iteration = 64. Plot area from -2-j1.205 to 2.82+j1.205, 302 x 244 pixels.)

Benchmark results

	A500/A590	A3001/GVP AT	SPEED INCREASE
Ray Trace	5880 secs	720 secs	x8.2
Smooth	113 secs	12 secs	x 9.4
Load ANIM	122 secs	34 secs	x 3.6
X-CAD	31 secs	4 secs	x 7.8
Mandlebrot Integer	345 secs	40 secs	x 8.6
Mandlebrot IEEE	2425 secs	203 secs	x 11.9

REPORT CARD

GVP A3001 Upgrade Kit
Power Computing 0234 273000
33 MHz 68030/68882, 4 meg of ram, AT Hard Drive Interface, £2,750. (28 MHz system £1,999).

EASE OF USE...
Very easy to fit, but only if you read the manual backwards. Doesn't require any tinkering with after.

SOFTWARE.......
Good installation and diagnostic software. You'll have to supply your own software to show how fast it goes. Very good Unix potential.

SPEED ....
Around eight times faster than a stock Amiga, sometimes more. The fastest Amiga you can buy, bar none.

VALUE..............
Immense cost, but immense performance. If your work can justify the outlay, this is the best buy you'll make.

OVERALL 93%
The Ultimate Amiga so far. Strictly for professionals who demand the best performance and can afford it.

Easy come,

WHAT would you do if you bought a half meg internal ram expansion only to find that comfortable multi-tasking is still at least another half meg away? Would you look at the bill and screw it up with frustration? I didn't. But I know a few who did.

Memory expansion beyond half a meg used to be a problem with the A500. Most were external units that slotted on to the expansion port. Some didn't even have through connectors. Others went inside the machine but you needed a soldering iron and a degree in micro electronics to fit them. And then the shielding wouldn't go back in.

A partial solution is the new breed of hard drives that come with slots for more ram. Commodore's A590 has room for 2 meg, the Xetec Fasttrak can carry 8 meg.

But that involves an initial outlay of at least £400 for a hard drive you may not have wanted. Then you start saving for ram.

NOW there is another way. Progressive Peripherals & Software (of Disk Master fame) has come up with the EXP-8000+ internal memory expansion board for the A500.

Marketed in the UK by Third Coast Technologies Ltd, the bare board costs £250 and can be populated by 1 megabit x 1 dynamic ram chips (dram, pronounced dee ram) in 2, 4 and 8 meg increments – the board and 8 meg will set you back £1,099.

I'll leave you to work out from that how much 2 meg of dram costs. Faster chips will cost more than slower ones; 120 nanoseconds is the norm.

Amazingly, the whole 8 meg can be accommodated internally, and it's not even a tight squeeze.

The instructions are detailed but simple to follow. After removing the A500's upper case, keyboard and protective shielding, the EXP- 8000+ slots straight into the socket on the motherboard where your 68000 chip used to be. I say "used to be" because by now you will have (carefully) removed it and (carefully) pushed it into the slot provided for it on the expansion board.

The EXP-8000+ measures approximately 250mm x 160mm and covers most of the uncovered bit of the A500's motherboard; a little stick-on rubber foot is supplied to keep the EXP-8000+ from damaging the motherboard and to stabilise things.

If you have a 68881 maths co-processor, you can fit it to the EXP-8000+ and clip a red timing jumper lead from the expansion board on to Gary. Once the board is fitted you put everything back as you found it, including the protective shielding, plug everything back in, switch on and go.

It took me half-an-hour to fit the EXP-8000+ into my A500. I'd never had the top off it before and I was surprised at how easy it all was. Too good to be true, I kept telling myself, but no, it worked first time.

THIRD COAST gave me 8 meg of dram to play with for a month. The EXP-8000+ worked with my A501 still in place, which meant I had 9 meg in total. It was wonderful. I felt like I'd won a million on the pools. I didn't know what to spend it all on. So I multi-tasked Space Quest III and two Infocom adventures totally from ram. Great. No gurus.

Then two of my favourite applications, Professional Page and Digi-Paint 3, began continually crashing with random meditation numbers. Ach! I wasn't multi-tasking, you understand, so it wasn't a chip ram problem.

No, the gurus meant a further expenditure was necessary on a new,

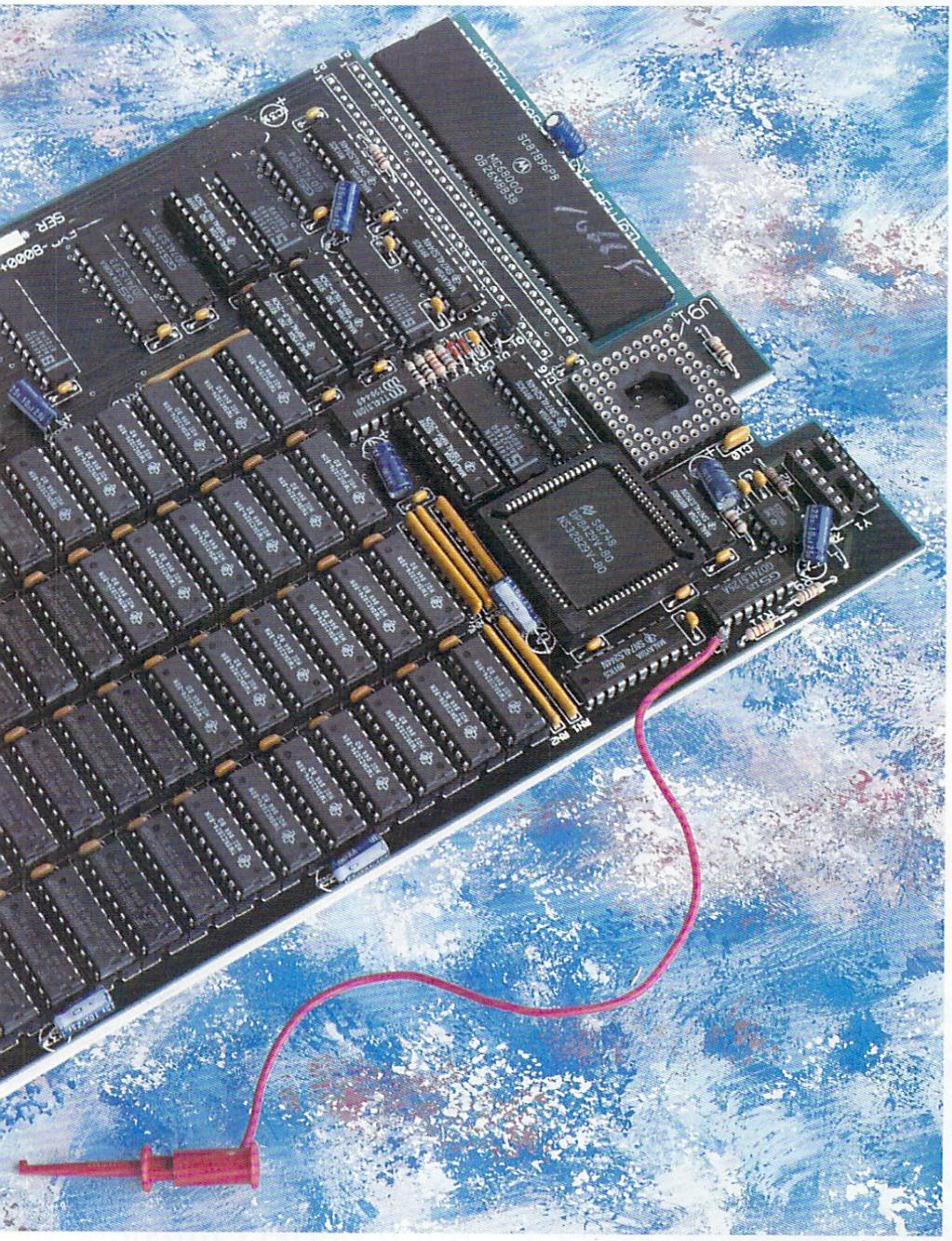


stronger, power supply unit (PSU) – one that is capable of putting out a minimum of +5 Volts at 4 Amps, +12 volts at 1 amp and - 12 volts at 0.1 amps. So says the manual.

And if I tried to run the EXP-8000+ with an inadequate power supply it could cause permanent damage to both the EXP-8000+ and my A500.

Ooer. I decided to take no chances. I

Getting the most from your A500 means splashing out on a few things. Ask any experienced user what to buy first, and he'll probably say half a meg of ram. But the decision to spend more money deserves greater thought, as Jeff Walker finds out



unplugged the second floppy. Then I decided to take one chance. I left my hard drive plugged in, which I knew sucked a little bit of power from the Amiga's PSU, but not a lot.

This time when I ran Pro Page and Digi-Paint 3 they both behaved themselves. I had found the limit. But your PSU may not be as powerful as mine. If you're considering the EXP-8000+, I advise you to consider a new PSU at the same time.

Once I had that problem beaten I went hell-for-leather and multi-tasked as many programs as I could. Chip ram gave out before I could fill the rest of memory, but then as well as Protext, The Works, MusicBox and HiSoft Basic Compiler, I *was* running four paint and DTP applications as well.

When the time came to give it all back to Third Coast, I needed only 15 minutes to disassemble the A500, remove the board and re-assemble everything.

I'm already missing the multi-tasking at home on evenings and weekends, being able to carry on working normally while uploading copy to my typesetters, for instance. Sigh.

The EXP-8000+ and 2 meg of dram is going to cost me about £450 - £500. I could get another A500, half a meg of ram and a second floppy drive for that price. But then I'd be back to square one. Wouldn't I?

easy go

REPORT CARD

EXP-8000+
Third Coast 0257 472444
£249.99

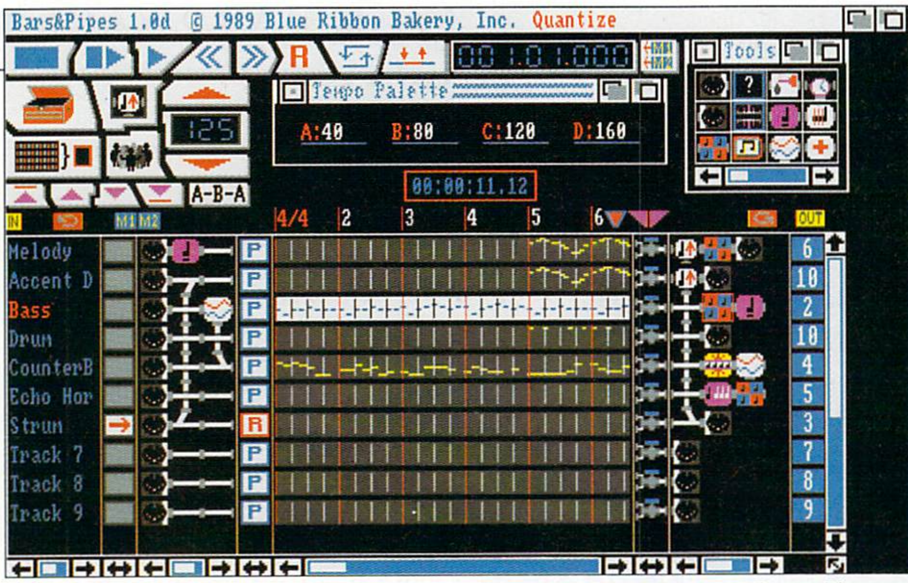
EASE OF USE ....
It helps if you have the proper torx screwdriver to open the Amiga, but an old fashioned allen key will do the job just as well.

PERFORMANCE
Worked first time, kept on working for a month of heavy use. Didn't overheat in the slightest. Multi-tasking at this level is a deeply wonderful experience.

VALUE.................
Not cheap. Plus you will need to buy a more powerful power supply unit. Look on it as an investment for the future. The price of dram will fall.

OVERALL 88%

Criticising a ram board is difficult because there are only so many things to check for. The EXP-8000+ passes all the tests.



Bars & Pipes has a quantiser. This tidies up the notes in your random composition and will hopefully make it sound more musical

Never mind the octaves

Even if you are tone deaf, there is software for the Amiga which will let you compose pitch perfect music in any style you like. Dean Friedman sheds a little light

BORED with life in the computer music world? Tired of the same old sequencing grind? Stuck in a groove, repeating the same old patterns, over and over again?

Well, friend, then there's only one answer for you – a random pattern generator.

The most powerful is M by Intelligent Music. Easy to use with loads of sensible icons, it can cope with four Midi channels. These can be used to input either single notes (monophonic) or combinations of notes (polyphonic) which M turns into the basis for its pattern. The result is only pseduo-random; M allows users a variety of methods which alter the themes within the source material.

Musical parameters that can be randomised include aspects of a phrase, such as note order, key velocity, transposition, note density, tempo and rhythm. These get changed within user defined parameters.

A risk of working with any random pattern generator is that quite quickly your material can turn into noisy gibberish. This is not the case with M. Because its design is musical, its



With Instant Music you can't hit a wrong note – all you do is move the mouse up and down and concern yourself with pretty patterns on the screen

output winds up being musical.

As with any random pattern generator, you still have to separate the wheat from the chaff, but M helps to minimise the trash and maximise the music. A dance track bass line, a percolating synth pop pattern or an ethereal new age texture are just some of the musical idioms that can be explored using this approach.

You're still responsible for the music. And the patterns still evolve from your ideas. It's just that the computer serves as a quick- thinking backing musician with great time and perfect pitch who's happy to let you bounce your ideas off him.

ANOTHER exciting random pattern generator is Laurie Spiegel's Music Mouse. A unique piece of software that turns your mouse into a musical instrument.

With a colourful control screen consisting of four keyboards outlining a rectangular grid, Music Mouse uses the gestures and movements of your pointer to trigger four channels of Midi or internal sampled musical events. The sound each action creates can be shaped by a user defined harmonic template.

So if you set up a five note scale all mouse movements would trigger phrases which would lie harmonically within that defined scale. Other user variables include randomises, arppegiating, selectable voice leading, tempo, and display modes.

With only the briefest familiarity with the program, anyone can generate interesting musical textures and phrases. Instead of having to bother worrying about the correct fingering of your instrument or whether you're playing the right accidentals over the next change, you're allowed the freedom to concentrate on other, equally important aspects of the music, like phrasing, the contoured shape of a musical line and the subtleties of gesture.

INSTANT MUSIC from Electronic Arts was written by Bob Campbell. Similar in some respects to Music Mouse, it lets you define a range of notes and rhythms over which you are free to improvise using the mouse. All pitches are forced into a harmonic progression – you can't hit a wrong note.

The display contains no notes, staves or barlines, only large colourful rectangles that rise and fall with the pitch.

It doesn't let you stretch out as readily as M or Music Mouse; its basic orientation is somewhat more conventional, with fewer randomising parameters. And yet, just as is the case with the other two, Instant Music presents you with a totally new way of visualising melody and voice leading, and that's an accomplishment that shouldn't be overlooked.

Random pattern generators have begun finding their way into conventional high end music sequencers. The three newest are Music X, Bars & Pipes and the latest version of Dr T's Keyboard Controlled Sequencer (KCS) contain an assortment of randomising algorhythmic tools.

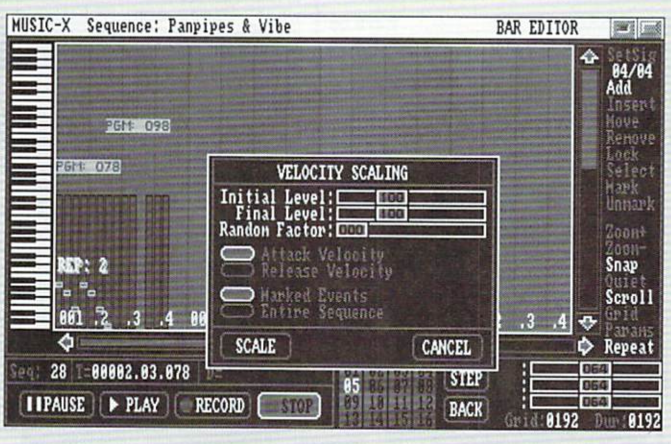
Don't be afraid to experiment with these tools – that's precisely what they were designed for. And, more importantly, don't be afraid to have fun with them. Because that's what's so neat about them all, they really are fun to use. You are still ultimately responsible for whether or not the end product is musical.

What's most appealing about these kinds of programs is that they force you to think about music in a very different way. Random pattern generating is one of those rare instances in which the computer becomes an almost equal partner in the creative process.

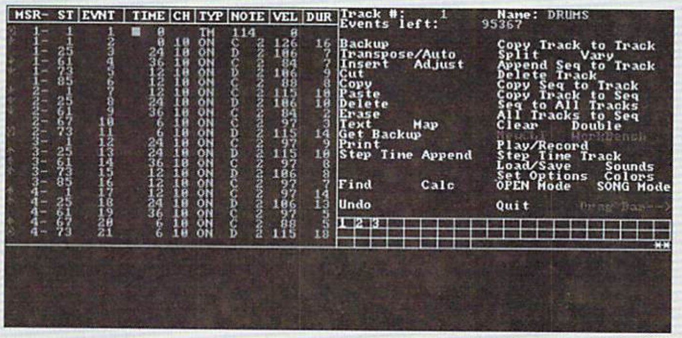
And the best thing is, you don't have to share any songwriting royalties with them.

Concordant contacts

M *Intelligent Music, 116 North Lake Avenue, Albany, NY 12206, USA (Tel 0101-518-434-4110)*
Music Mouse *Dr T's Music Software Inc, 220 Boylston Street, Suite 206, Chestnut Hill, MA 02167 (Tel 0101-617-244-6964)*
Instant Music *Electronic Arts, Langley Business Centre, 11-49 Station Road, Langley, SL3 8YN (Tel 0753 49442)*
Music X *Microillusions (Europe) Ltd, Brooklands, New Road, St Ives, Huntingdon, Cambridgeshire, PE17 4BG (Tel 0480 496497)*
Bars & Pipes *Blue Ribbon Bakery Inc, 1248 Clairmont Road, Suite 3D, Decatur, GA 330, USA (Tel 0101-404-377-1514)*
Dr T's KCS *Dr T's Music Software Inc, 220 Boylston Street, Suite 206, Chestnut Hill, MA 02167 (Tel 0101-617-244-6964)*



In Music-X you can choose to have the velocities of note events changed by adding a random offset to each



M's beauty lies in the ease with which you are able to create interesting and useful musical phrases from even the simplest of source material

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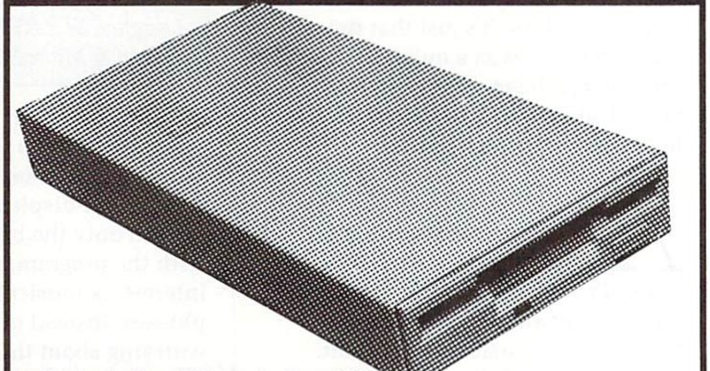
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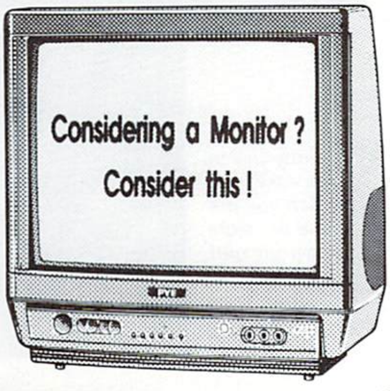
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An apple a day...

Nic Veitch investigates a utility that lets you read and write Mac discs

EVERYONE would probably agree that the Amiga is a wonderful machine, but there can be times you want to use some other, more dedicated, equipment. This doesn't mean the Amiga is in any way inferior, just that there is an establishment for computers.

Just as going to Oxford gives you a better chance of joining the BBC, being a 386AT gives you a better chance of finding decent accounts software.

The problem with this establishment is that it even stretches to disc formats and the way that information is stored on a floppy drive. PCs and STs aren't much of a problem because their 3.5in drives are mechanically similar to the Amiga's.

The solution to data transfer in these cases is a simple matter of some cunning software to access the disc in a different way, like Dos-2-Dos or CrossDos. This is not too difficult, after all about 90 per cent of games come on discs formatted in a different way to AmigaDos.

The real problem comes when you want to talk to a Macintosh. Apple drives are weird. Really weird. Instead of simply spinning the disc and moving the heads in and out, Apple decided that it could get more on its discs if they rotated at different speeds, depending how far from the centre the head was.

Whether or not this was a good idea is open to question, but it certainly made the drives more complicated. It also had the side effect that you could read "normal" discs with a Mac drive, but not vice-versa.

Mac-2-Dos doesn't solve this problem, but it does allow you to attach a Mac drive, single or double-sided, to your Amiga. A small adaptor connects between the Mac drive and the drive socket on the back of the Amy. The drive will draw power from the Amiga, but not much more than a normal external drive.

You can still chain drives as long as the Mac is the last in the chain, but watch how much power you are drawing.

AmigaDos won't recognise your latest addition, but the Mac-2-Dos software will. It looks just like a disc management front end, like SID for instance, with the exception that the right-hand panel lists files on the Mac drive. The drive will be treated as one of the family and you can format, verify and rename Mac discs as though they were sensible.

The software will convert Ascii files, pure binary, MacBinary, IFF-MacPaint and even Postscript PS and EPS files, though at present bitmaps are not converted. Default



An addition to your Amiga not a take-away

tools and icons can be attached if required.

The manual is exhaustive and enlightening, especially if you know little of filetypes on the Mac or the Amiga.

Mac-2-Dos has all the facilities of Dos-2-Dos and more, but with a friendly interface. With the exception of bitmap conversion, there is nothing left out that you would ever miss. More details from Central Coast Software, 424 Vista Avenue, Golden, Colorado 80401, USA (Tel 0101-303-526-1030).

An editor for all occasions

John Kennedy checks out a program editor that can be configured to your exact specification

SOMETHING which promises to make programming easier must be worth a look. At least, that's what Mirage Studio is hoping with the Mk II release of its ToolBox editing software.

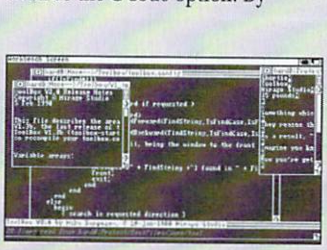
Mirage reasons that because most language compilers and assemblers concentrate on the generation of code instead of the ease of use of the editor, why not produce a stand-alone text editor which goes completely OTT in the flexible stakes?

Flexible is not the word to describe ToolBox. Neither does the phrase "very flexible indeed" get any closer. The words you need are "more flexible than you could possibly want".

Imagine you know a programmer who has written a text editor and has agreed to incorporate any features you suggest. Anything at all. What do you want in the pull-down menus? No problem, mate. You want to be able to compile and link a C program from it? Wee buns. Thirty-two files open at once good enough for you? Okey-dokey.

Now you're getting the general picture. The only drawback is that *you* are the programmer, so *you* must customise the system to your own requirements. To do this you must edit the ToolBox system configuration file – a programming language in its own right.

Yup, you code your own features into a language that's half C, half Pascal. This approach makes some neat things possible, such as the C code option. By



Edit more files than you have fingers to type with

pressing Ctrl-C the editor will expand any abbreviations of C words into their full form, complete with braces and indentation. This can easily be changed to allow for Pascal or assembler statements. Hoopy.

Toolbox is mounted as a device instead of a simple run-of-the-mill program. This means text can be inserted and removed by other programs running in the multi-tasking environment. Hence compilers and linkers can extract source and produce error messages all from within the ToolBox editor.

This is a tool for programmers. You need to be a programmer to understand it and you need to be a programmer to customise it.

Apart from some slightly worrying moments when it gurued, I can recommend ToolBox to anyone trying to improve their existing coding set-up. It's only £35, and even if you never use the editor the customising language will keep you busy for hours.

Pdom PD Amiga Software Pdom PD Amiga Software

Graphics

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FFISH 243 – No Click stops the disk drive clicking if no disk present. Pass Word you specify the password for your system security. Pcopy V2.0 the excellent disk copier.

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FFISH 244 – Boot Intro you specify The headline text of upto 44 characters and the scrolling text of upto 300.

Application

FAUG 41 – Amiga Arc V0.2 compatible with ARC V5.0.

PDOM93 – ARP V1.3 Amiga DOS Replacement Project.

FFISH 58 – ASDG a RAM disk that survives reset, Big View displays any size IFF picture, EGraph creates graphs from X,Y pair text files. NewZap disk sector editor.

FFISH 188 – Boot Intro V1.0 displays a scrolling and a still message of your choice at boot up.

FAUG 50 – Dir Util VI the disk manager.

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FFISH 157 – XIcon V2.01 allows you to call up scripts containing CLI commands from an icon.



Demos

Utility

FFISH253– Elements a display of the periodic table.

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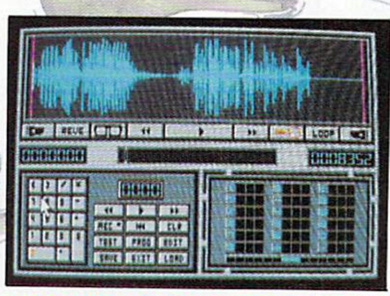
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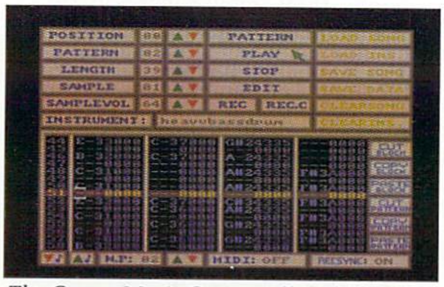
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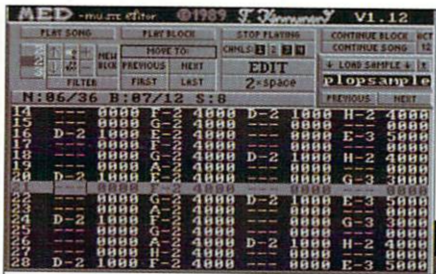
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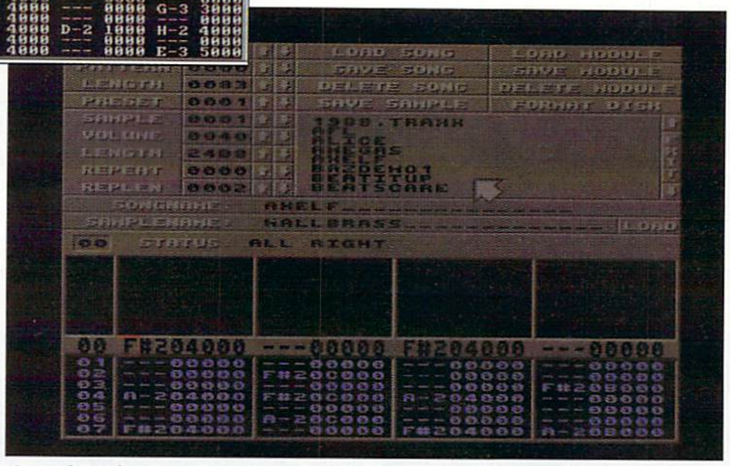
With its vast library of freely distributable software, the Amiga is the envy of all other computers. In the first of a new regular column, Stewart C. Russell tracks down the best of the public domain music sequencers



The Games Music Creator offers the ever patient user access to midi equipment



Written in C, MED is one of the few 'trackers that actually obey Intuition's rules



SoundTracker – the program that has spawned a hundred look-alikes. Imitation is the sincerest form of flattery?

HAVE you ever wondered how games writers get the atmospheric tunes in them written? Or where all those demo tracks come from? Well, 99.999 per cent of them, and I think I'm being quite conservative here, are written with a utility called SoundTracker, or one of its many derivatives or lookalikes.

There must be at least 20 of them, all slight variations on a theme. They all do one thing – they are a means of arranging – or sequencing – sampled sounds.

The original SoundTracker has had a chequered career. It was released commercially by Karsten Obarski but has been "adopted" by a very large number of the under-the-counter culture. In the hands of these generally hateful people it has slowly mutated to become something slightly more useful.

The name has mutated, too... the list gets longer daily as more crackers insert their names in the code and then claim to have written it.

SoundTracker itself is still a commercial product so no reputable public domain collection should contain it. As ever, UGA has no qualms.

Every 'tracker has two things in common with every other 'tracker – a block of four channel data lists, plus some means of loading and saving samples and music to and from disc. Hexadecimal numbers alter the way the sample is replayed, and in most cases samples only load if they can be found in something called a preset file.

If this doesn't sound very user-friendly, you're dead right. In general, 'trackers make no concession to the non-programmer. They also don't co-exist with other programs very well – multi-tasking is a bad word to crackers. If you've never seen an Amiga guru before, you won't be able to say that after playing with SoundTracker.

But with a little practice and a huge amount of patience you can stick a set of samples together in a way which vaguely approximates to music.

The four track lists are composed of a musical note (C#, D, and so on), a hex number representing a sample in memory, and then four hex digits which are used for various effects like vibrato and arpeggio. This is a very

cryptic way of doing things, but 'trackers are really assembly hackers' tools – the way the numbers are handled is closer to, though several million times easier than, programming the sound chip directly.

The more advanced 'trackers include features like IFF sample loading (SoundTracker accepts only raw data) and one of them even has minimal sampling software built in; you'll still need the hardware, though.

Because SoundTracker stands on dodgy legal ground – and very dodgy programming ground – it can't be recommended. But if you *must* see it, the best ones so far are NoiseTracker and SoundTracker 2.4; UGA runs various concoctions on their Specials Disks. These aren't as well presented as most other PD discs, so much of the work is left to you.

Andreas Tadic's Game Music Creator, on the other hand, is light-years better than the SoundTracker guru-alikes. It allows input from a Midi keyboard (with the right interface and leads) or from the Amiga keyboard, which is remapped as a two octave piano. It handles IFF and raw samples, has a simple file requester (for DF0: and DF1: only) and is much prettier and more robust than SoundTracker.

GMC still has a huge tendency to guru. It won't let you back to AmigaDos to check up on discs, but it does gets rid of the annoying preset list and reliance on all discs being called ST-00 or ST-01, as SoundTracker does.

The keyboard to piano remapping sometimes works, sometimes doesn't; it depends on how GMC is feeling at the time. If you have a midi keyboard and interface, or if you don't like SoundTracker, GMC is the one to go for. It's on UGA Special Disk #11. There's no mention of any shareware charges.

PICK of the bunch in terms of general ease of use is MED version 1.12, hacked from solid C by Teijo Kinnunen of Finland. It can load SoundTracker and SoundFX songs, and reads IFF and raw samples. MED isn't quite as pretty as GMC – there's no file requester, for example – but runs from Workbench on a standard movable screen.

It is terribly well behaved and has good instructions, something that no other 'tracker has. The only way I could crash MED was to load in, by accident of course, a very large text file.

MED is ready to go on Fish #255, with both English and Finnish versions, three demo songs and 25 sampled instruments. There's also a music player and a program to convert MED songs and samples into a vast amount of C source.

Teijo Kinnunen is at this moment busy writing MED 1.20. The biggest new feature will undoubtedly be Midi support, thereby knocking GMC out of its unique position. The rewrite is a massive job and will take a long time to Finnish, though the current version is well Finnished and very usable. You want me to Finnish these terrible jokes? Well I'm not Finnished yet, so Suomi!

When wading through masses of samples, all with strange names, it's useful to be able to hear a sample of the sample. A very neat little program to do this lives on TBAG #28. It is called, rather imaginatively I thought, Sound.

Not merely will it play IFF sounds at any speed up to 65 KHz, it can loop them, play stereo samples (from Perfect Sound) and play any sample length, limited only by fast ram.

It's amazing what you can find with Sound. One of my game discs has the

Paying for

EVEN if the author of a shareware program is on the other side of the world, rest assured that The Mail will get through to him. If you have a Visa card, you can arrange for Visa to send him a cheque for you, which is the simplest and most problem-free way of doing things. But this trick is not open to everyone.

International Money Orders are possibly the safest way of sending money abroad, but they are somewhat costly – at least £4, which is around two-thirds of $10, a popular shareware fee. For large fees – the highest Amiga one I've seen is still only $50 (about £30) – the IMO is your best bet.

The method I use is cash. You heard me right, nothing provokes a quicker response from hard-up programmers than the folding green stuff (or brown stuff, or sort of salmony pink, or smallish with added Sibelius if you're Finnish).

Bureaux de Change are easy to find in most towns and cities. The usual charge is £1 or one per cent of the total cost, whichever is the larger, for each different currency bought.

A few banks waive charges if you hold a student account with them. It's worth asking. I only asked after I'd already been hit for about a fiver in charges – the price of two Fish discs down the drain!

Bear in mind that some countries only allow a certain amount of cash to be moved to and from the country, so always ask if you're unsure.

Whatever way you decide to pay a shareware author, you'll have to get the cash or IMO abroad somehow. The wonderful Royal Mail, the employees of which my dog loves (in a white wine sauce) run an insured mail service around the world. An extra £1.55 on top of your normal letter post sees £150 worth of insurance for one letter.

Not all countries have a mail insurance agreement – the USA doesn't for instance – but if the letter is undelivered it will generally be returned, even if there's no insurance setup in the destination country.

If the letter is lost, you should be able to claim its value back. You will have to prove that the letter was worth what you claim, and the process is potentially rather slow.

Always enclose a short note to the author of the shareware product

Neighbours theme hidden away on it. It's OK, I got over it.

Sound was written by Richard Lee Stockton, and is freeware.

Ah yes... before I go I'd better warn you that Keith Young, the author of the popular Access! comms shareware, is no longer traceable from the address in Goodview, Virginia given in release 1.42. The entire might of the US Mail couldn't find him either, so I'd check before sending him any money. If you track him down, please let me know.

Shareware fees – are they legal?

TECHNICALLY, public domain only refers to works to which the author has given up all commercial rights. Unless there's a statement in the software or its documentation to this effect, you can't assume that it is legal to own and use this software without the author's permission.

Pure PD has a clearly defined legal position, the same cannot be said for shareware. Although both are freely redistributable – anyone may copy and spread them, as long as they don't charge for the software itself – shareware is software which the author has decided to market, appointing the general public as distributors.

Freeware is shareware for which the author charges nothing, but it is still the intellectual property of the author.

All software is protected by international law. This is a vastly woolly subject, but basically, if the program you use says something like "You owe me $10" either in the software or the documentation, you really do owe them the money.

shareware

stating your name and address (block capitals are best) what version you use, any problems you have with it, and perhaps a suggestion about possible new features.

Shareware authors are usually very receptive to feedback – after all, another name for shareware is User Supported Software – so there's a high chance that your good idea could be incorporated in future updates.

It takes a while for international mail to get around, so you should only start to get very slightly worried if you have not heard from the author after 10 weeks or so.

Some cheap shareware never gets a reply, and others will only give notification of the next update, but in many cases you will get a disc back with the latest version, together with a note from the author so deeply appreciative that it can cause blushing in sensitive types.

Shareware authors are nice humans and deserve to be treated as such. There may be a long delay before you get a reply, but at least you can use the software with a clear conscience.

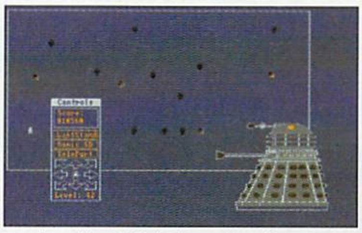
Britons are often seen as very poor payers. Out of the 1,100 or so registered users of Timm Martin's SID utility, only about a dozen are from the UK. Why not do something to restore our tarnished reputation, huh? And I don't mean send Duraglit instead of cash.

GAME OF THE MONTH

DALEKS

ORIGINALLY written for mainframes, Daleks (or Droids or Zombies or Robots) is possibly the simplest game ever authored. The graphics are especially simple, considering the game was written for character-only VT-52 terminals.

The player is surrounded by



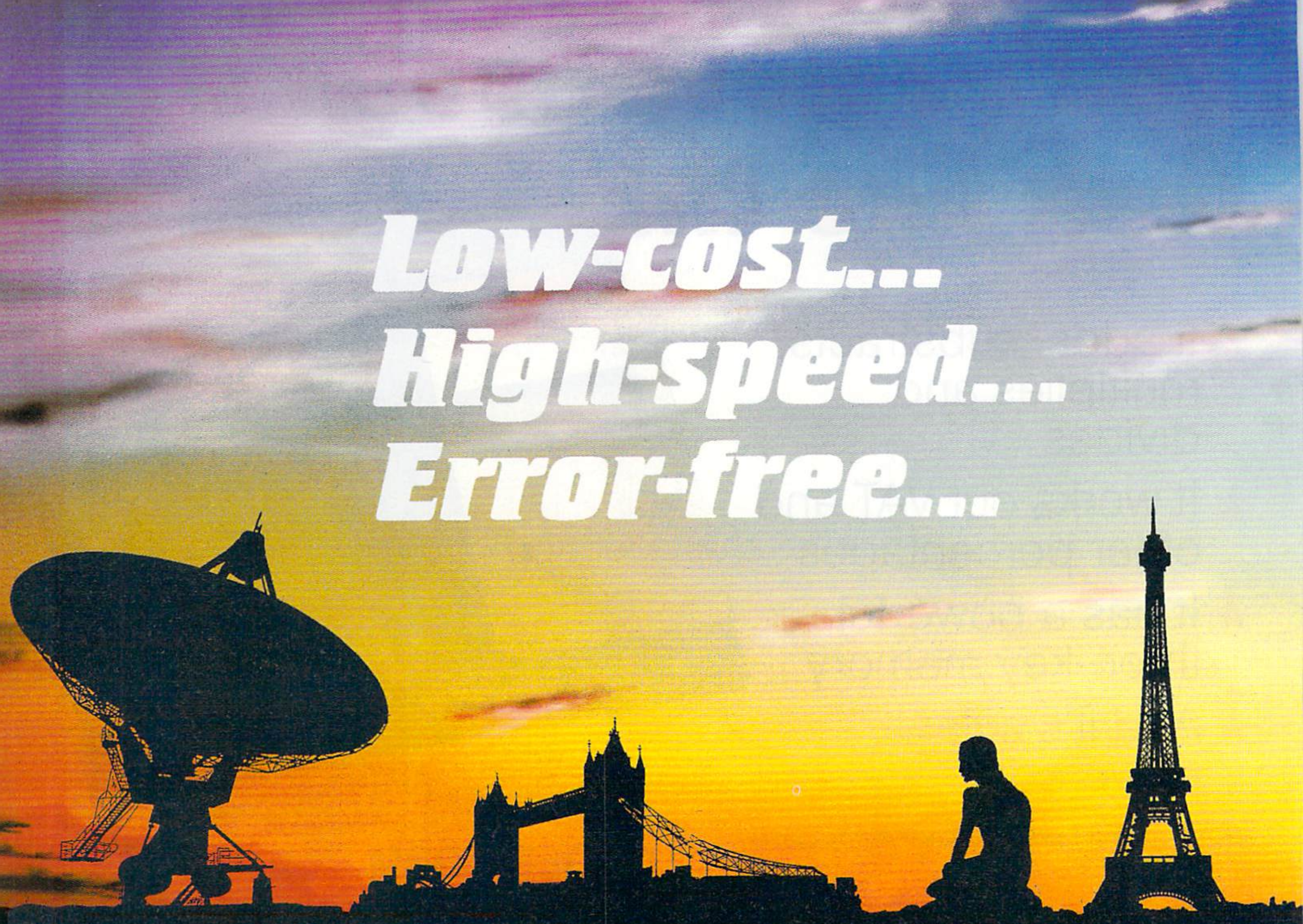
malevolent Daleks who, for every move the player takes, move one step towards the player. The Daleks trash themselves if they run into one another and by manœuvring cleverly the player can remove all the nasties just by hiding behind the trash heaps.

There's also a one-shot sonic screwdriver to dismantle Daleks that are too close, plus a random teleport for that desperate moment.

When you consider that the Amiga version has no sound and only character graphics, the gameplay must be good.

Good isn't the word; it transcends dental medication – that means it's very good indeed. I have spent (or wasted?) more time on this game than anything else on the Amiga. I find myself composing new strategies in my sleep.

You'll find Daleks on TBAG #6. This is a very old disc so consequently Daleks needs NoFastMem to be run on an expanded machine. The game keeps a log of top scores, essential for peer-group bragging, and costs a shareware fee of but a single Hamilton, that being an American 10 dollar bill.



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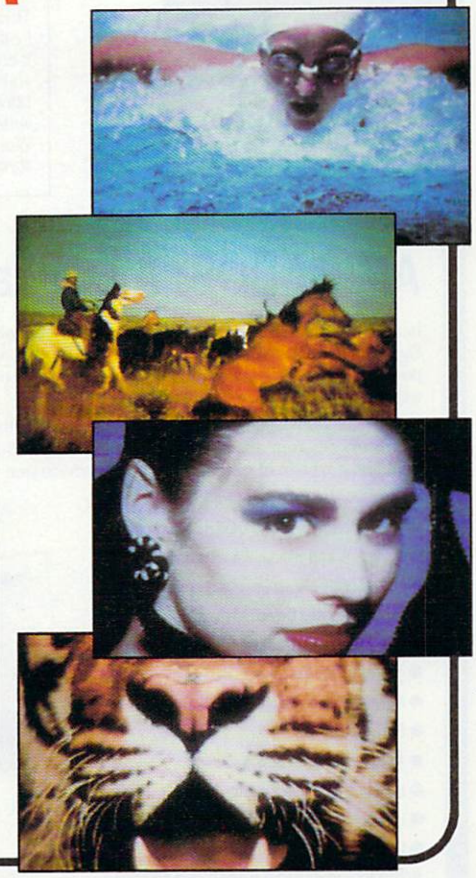
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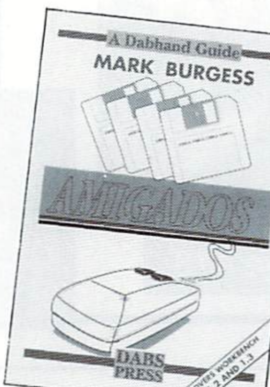
Is a comprehensive guide to the Commodore amiga's disc Operating System (Versions 1.2 *and* 1.3). It provides a unique perspective on this powerful system in a way which will be welcomed by the beginner and the experienced user alike.

Rather than simply reiterating the Amiga manual, this book takes a genuinely different approach to understanding and using the Amiga and contains a wealth of practical hands-on advice and hints and tips.

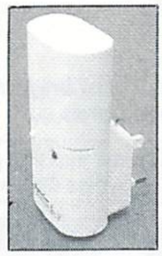
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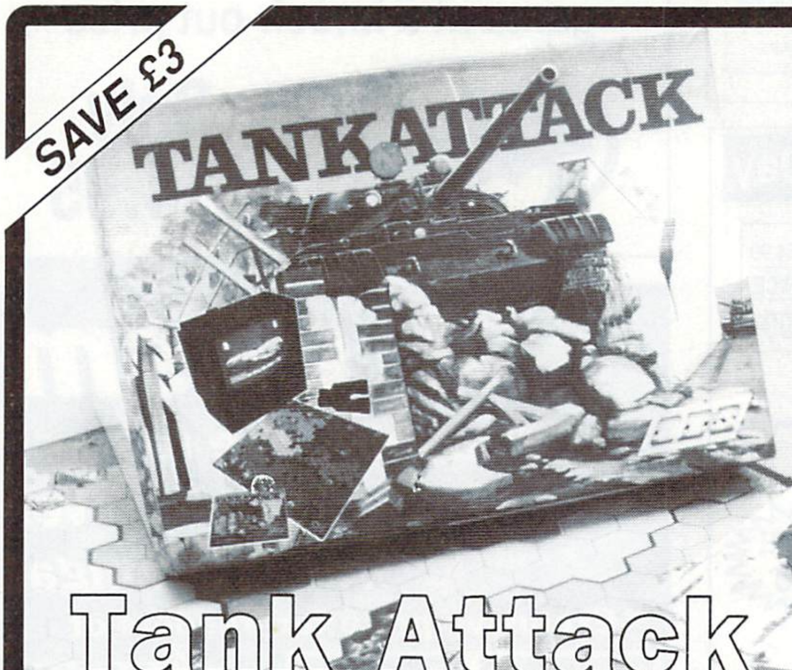
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To coin a phrase



THE most famous example of the origin of a piece of jargon, and the most argued about, is the term "bug", which refers to an error in either computer equipment or programs.

The most popular and best documented story is that it was invented in 1945 by a computer programmer named Grace Murray Hopper while she was working for the US Navy.

One humid summer day the Harvard Mark I started playing up, so the boffins had to shut it down. Upon investigating they found that an electrical switch was blocked by the remains of a moth that had somehow found its way into the maze of circuitry.

They removed it with tweezers and taped it into their meticulously kept logbook (which still exists). Next to it they wrote: "First actual case of a bug being found."

After that, every time an officer came in to ask if they were achieving anything, they told him they were "debugging" the computer. The term stuck.

Any word ending in "ware" is a good example of jargon. First we had hardware and software. Then, when the differences between them became a bit fuzzy, we had firmware.

Products which were constantly overshooting their completion deadlines were labelled vapourware, and some seriously maladjusted technicians went on to rename the human operators as wetware.

Looking at the number of Strip Poker games and other stereotyped programs available at the moment, we could probably get away with calling the whole leisure software market *mensware*.

Tomorrow never comes

DO you remember spending many hours in school rhyming off proverbs by heart, and wondering about their relevance to modern day life? There is no doubt that several could benefit from being modernised, so here is the list we in the office have compiled so far. Many would do well as entries in the Amiga manual, and should be engraved upon your heart.

- Look before you format.
- A game on the disc is worth two in the listings.
- Don't put all your files in one partition.
- Don't count your discs before they're verified.
- A fool and his copyright are soon parted.
- We'll Dos that bridgeboard when we come to it.
- Pride comes before a guru.
- Look after the bits, and the bytes will look after themselves.
- Rom wasn't blown in a day.

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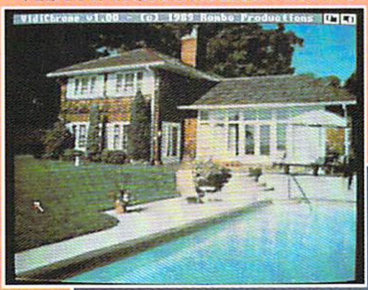


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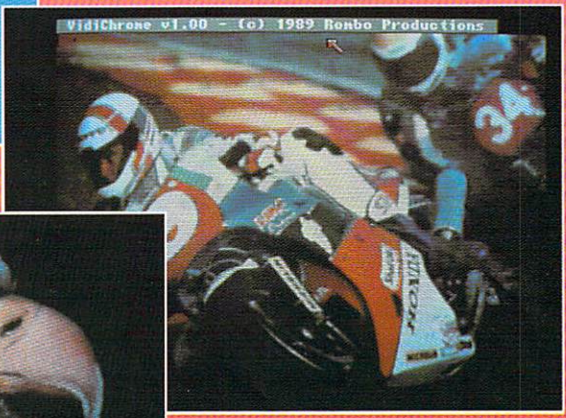
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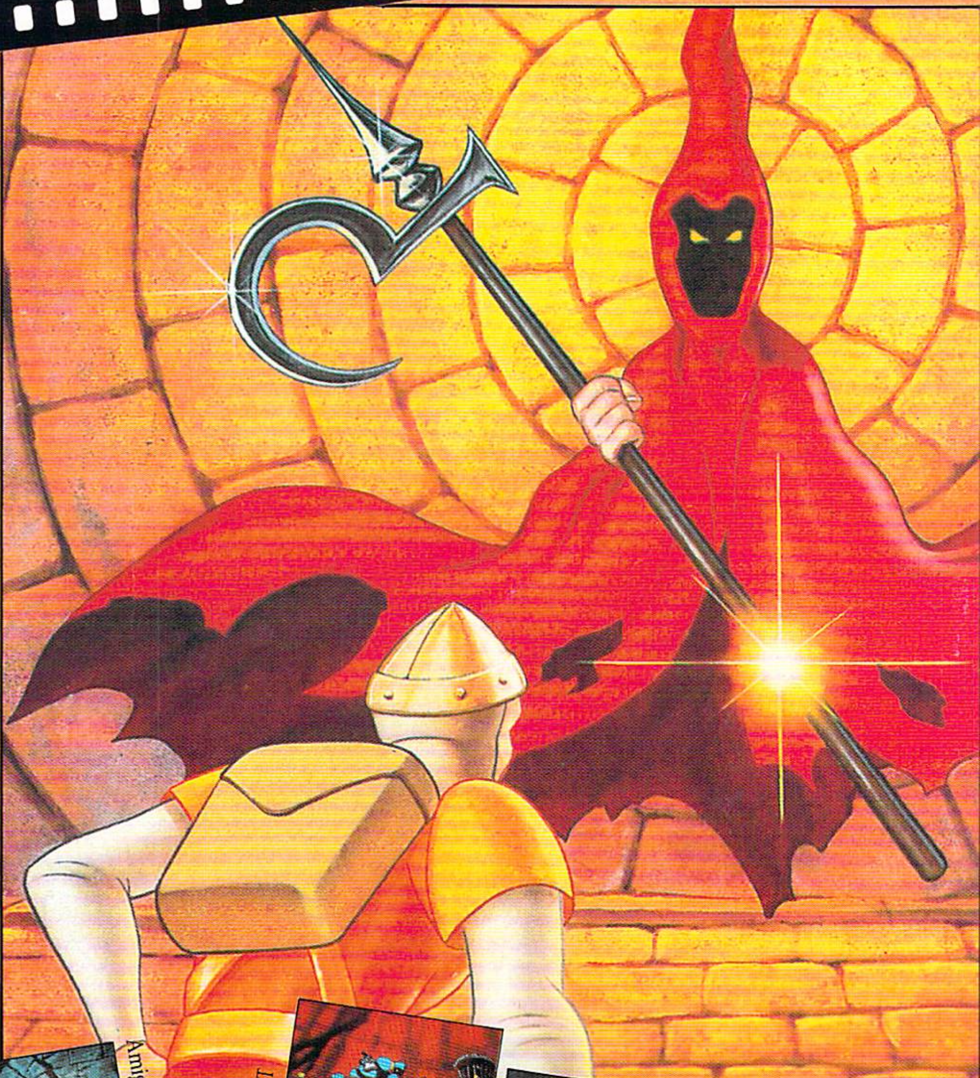
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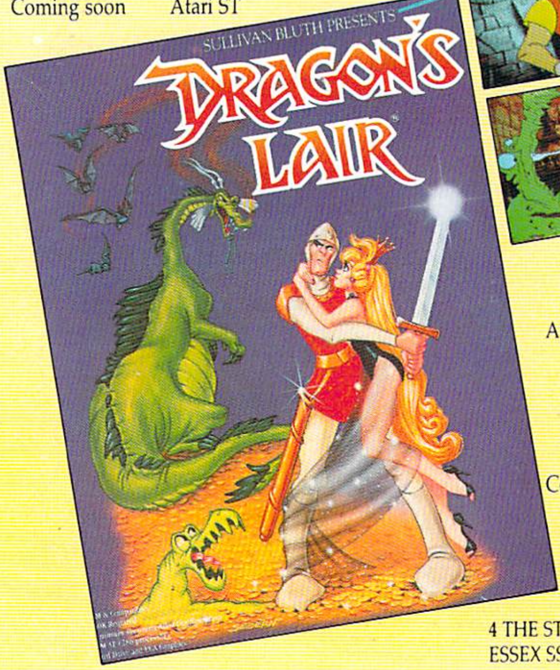
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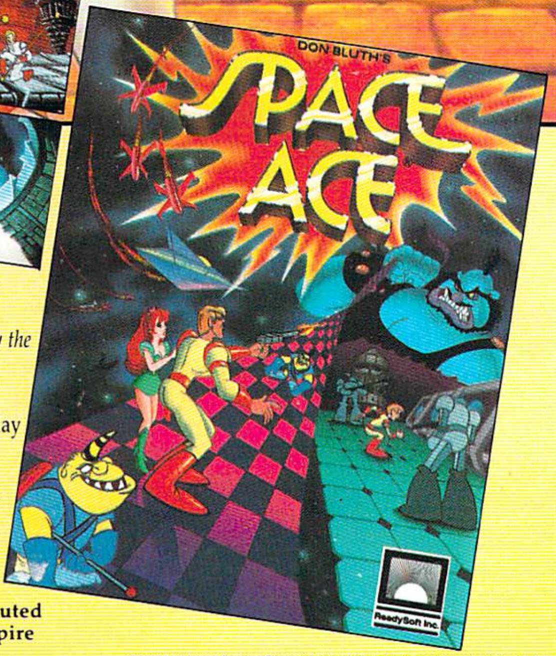


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